

S. HRG. 107-328

FOREST FIRE PREVENTION

HEARING
BEFORE THE
SUBCOMMITTEE ON PUBLIC LANDS AND FORESTS
OF THE
COMMITTEE ON
ENERGY AND NATURAL RESOURCES
UNITED STATES SENATE
ONE HUNDRED SEVENTH CONGRESS
FIRST SESSION

TO RECEIVE TESTIMONY ON THE INVESTIGATIVE REPORT OF THE
THIRTYMILE FIRE AND THE PREVENTION OF FUTURE FIRE FATALITIES

NOVEMBER 14, 2001



Printed for the use of the
Committee on Energy and Natural Resources

U.S. GOVERNMENT PRINTING OFFICE

78-160 PDF

WASHINGTON : 2002

For sale by the Superintendent of Documents, U.S. Government Printing Office
Internet: bookstore.gpo.gov Phone: toll free (866) 512-1800; DC area (202) 512-1800
Fax: (202) 512-2250 Mail: Stop SSOP, Washington, DC 20402-0001

COMMITTEE ON ENERGY AND NATURAL RESOURCES

JEFF BINGAMAN, New Mexico, *Chairman*

DANIEL K. AKAKA, Hawaii	FRANK H. MURKOWSKI, Alaska
BYRON L. DORGAN, North Dakota	PETE V. DOMENICI, New Mexico
BOB GRAHAM, Florida	DON NICKLES, Oklahoma
RON WYDEN, Oregon	LARRY E. CRAIG, Idaho
TIM JOHNSON, South Dakota	BEN NIGHTHORSE CAMPBELL, Colorado
MARY L. LANDRIEU, Louisiana	CRAIG THOMAS, Wyoming
EVAN BAYH, Indiana	RICHARD C. SHELBY, Alabama
DIANNE FEINSTEIN, California	CONRAD BURNS, Montana
CHARLES E. SCHUMER, New York	JON KYL, Arizona
MARIA CANTWELL, Washington	CHUCK HAGEL, Nebraska
THOMAS R. CARPER, Delaware	GORDON SMITH, Oregon

ROBERT M. SIMON, *Staff Director*

SAM E. FOWLER, *Chief Counsel*

BRIAN P. MALNAK, *Republican Staff Director*

JAMES P. BEIRNE, *Republican Chief Counsel*

SUBCOMMITTEE ON PUBLIC LANDS AND FORESTS

RON WYDEN, Oregon, *Chairman*

DANIEL K. AKAKA, Hawaii	LARRY E. CRAIG, Idaho
BYRON L. DORGAN, North Dakota	CONRAD BURNS, Montana
TIM JOHNSON, South Dakota	PETE V. DOMENICI, New Mexico
MARY L. LANDRIEU, Louisiana	DON NICKLES, Oklahoma
EVAN BAYH, Indiana	GORDON SMITH, Oregon
DIANNE FEINSTEIN, California	CRAIG THOMAS, Wyoming
CHARLES E. SCHUMER, New York	JON KYL, Arizona
MARIA CANTWELL, Washington	RICHARD C. SHELBY, Alabama

JEFF BINGAMAN and FRANK H. MURKOWSKI are Ex Officio Members of the Subcommittee

KIRA FINKLER, *Counsel*

FRANK GLADICS, *Professional Staff Member*

CONTENTS

STATEMENTS

	Page
Bingaman, Hon. Jeff, U.S. Senator from New Mexico	2
Bosworth, Dale, Chief, Forest Service, accompanied by Jerry Williams, Director, Aviation and Fire Management	11
Campbell, Hon. Ben Nighthorse, U.S. Senator from Colorado	1
Cantwell, Hon. Maria, U.S. Senator from Washington	5
Craig, Hon. Larry E., U.S. Senator from Idaho	4
Gleason, Paul, Professor of Forest Sciences, Colorado State University, Fort Collins, CO	29
Gray, Jody, Yakima, WA	44
Hastings, Hon. Doc, U.S. Representative from Washington	8
Schaenman, Philip, President, TriData Corporation, Arlington, VA	24
Weaver, Ken, Yakima, WA	33
Wyden, Hon. Ron, U.S. Senator from Oregon	1

APPENDIX

Responses to additional questions	49
---	----

FOREST FIRE PREVENTION

WEDNESDAY, NOVEMBER 14, 2001

U.S. SENATE,
SUBCOMMITTEE ON PUBLIC LANDS AND FORESTS,
COMMITTEE ON ENERGY AND NATURAL RESOURCES,
Washington, DC.

The subcommittee met, pursuant to notice, at 2:50 p.m., in room SD-366, Dirksen Senate Office Building, Hon. Ron Wyden presiding.

OPENING STATEMENT OF HON. RON WYDEN, U.S. SENATOR FROM OREGON

Senator WYDEN. The subcommittee will come to order.

Let me apologize to my colleagues. Two places at once turned into three places at once, and I want my colleagues to know I am sorry for the inconvenience.

The chairman of the full committee is here, Senator Bingaman. We are very pleased that he is here, and I want to recognize him before we begin.

[A prepared statement from Senator Campbell follows:]

PREPARED STATEMENT OF HON. BEN NIGHTHORSE CAMPBELL,
U.S. SENATOR FROM COLORADO

Thank you Mr. Chairman for allowing me to testify before this Subcommittee today.

I would also like to recognize and thank Mr. Paul Gleason, Forestry Professor at Colorado State University for coming to Washington to testify here today.

We are here to discuss an unfortunate incident, the type with which Coloradans are all too familiar. The flames of the Thirtymile Fire caused four fatalities, accounting for the nation's second worst wildfire disaster. The Storm King Mountain fire west of Glenwood Springs, Colorado has the infamous distinction of being our worst wildfire tragedy. In that fire, on July 14, 1994, fourteen brave firefighters gave their lives to protect the lives of so many others.

After that incident, I introduced a resolution to honor those brave men and women and to highlight the importance of fire safety and underscore the need to devise sensible ways to minimize fire damage.

I understand that there is a debate whether certain forest maintenance methods, such as controlled burns, are environmentally preferential or are contrary to a natural state.

Wildfires are common in the West. The arid conditions and significant swing in precipitation levels make the region a prime target for fires. Yet, with all of our experience, men and women, and homes and habitat continue to perish in combating these blazes.

I submit to this Subcommittee, that any debate concerning forest maintenance should recognize that fires in the West will continue. Therefore, we should make sure that such maintenance programs focus on the human factor and not on other concerns. If a particular forest maintenance program can prevent the death of even one firefighter, then that is the program we should implement. Some proponents of forests and public lands seem to argue that man should be kept out of the discus-

sion altogether; that man has no place in a discussion about wilderness, for example.

As an advocate for public lands, I can confidently say that man has a place in such debates. Ignoring the human factor ignores the fundamental relationship between man and the environment. I raise this issue not to point blame, but to highlight that man has a place at the environmental table.

Fire fighting is one of the most dangerous jobs in the world. The men and women of our fire departments put their lives on the line every day to protect us. We have a duty to enact policies that would protect them in kind.

I look forward to the witnesses' testimony, and in particular, to find out what lessons we learned from the Storm King Mountain Fire, and most recently, from the Thirtymile Fire.

Thank you.

STATEMENT OF HON. JEFF BINGAMAN, U.S. SENATOR FROM NEW MEXICO

The CHAIRMAN. Well, thank you very much, Mr. Chairman. Let me congratulate you and Senator Craig on having this hearing. I know Senator Cantwell had specifically asked for this hearing to occur.

I was particularly interested in the issues that are going to be dealt with here because we have seen this problem of inadequate safety precautions in our firefighting efforts for many years, and I am sure you are all aware of that. I had the unfortunate occasion to travel to New Mexico in 1994 with then-Secretary of Agriculture, Mike Espy, to attend a memorial service for the three Federal firefighters who died in a helicopter crash in my State there in the Gila National Forest. And I know there have been many other instances of tragic losses since then, and the deaths that occurred at the Thirtymile Fire in the State of Washington this past July are most recent examples, which obviously we are all very sad about.

Let me just say I want to support any effort that you make in the subcommittee and that we can make in the full committee to keep a close eye on what is done here. As I understand it, there is an action plan to improve safety in the fighting of fires, and I hope we can have a constant oversight of that as we proceed for the next year or 2. I think that would be very important.

But thank you for letting me make a short statement. I am not able to stay for the full hearing, but I do appreciate very much the fact that you are having it.

[The prepared statement of Senator Bingaman follows:]

PREPARED STATEMENT OF HON. JEFF BINGAMAN, U.S. SENATOR FROM NEW MEXICO

I was deeply saddened when I heard the news last July that four firefighters were killed fighting the Thirtymile Fire in the State of Washington. I would like to express my deepest sympathy to the family members who are here today.

Many members of this Committee are from Western States where fires, and threats of fires, are an ongoing concern. These are bipartisan issues that are important in many States. In my own State, we experienced the catastrophic results of an out of control fire just last year—the Cerro Grande fire. As Chairman, I want to assure everyone that one of this Committee's highest priorities is oversight of Federal fire policy on public lands.

After the 2001 fire season, Congress provided the agencies with substantial additional funding to ensure that all aspects of the National Fire Plan, including firefighting, were adequately provided for. I was happy to be a part of that effort.

In addition, this Committee has held numerous hearings on fire policy. At every one of these hearings, the Federal land management agencies, including the Forest Service, tell us that firefighter and public safety is the number one priority above and beyond everything else.

In light of these assurances, I was troubled to learn that the agency's internal investigation of the fire concludes that Forest Service personnel made a number of tragic mistakes relating to safety considerations. Recently, I was pleased to learn that the Chief released an action plan to improve safety on the firelines. However, I want to make it clear that we intend to closely monitor the implementation of this action plan and hold the agency accountable.

I think it is appropriate that Senator Cantwell requested this hearing so that we can better understand the questions surrounding issues of safety. I was happy to accommodate her request for this hearing. I look forward to working with her and other Senators to improve firefighter safety. We must all work together to ensure that this tragedy is not repeated.

Senator WYDEN. I thank my colleague, the chairman of the full committee, and again appreciate him coming.

The purpose of the hearing today in a sentence is to make sure that the four lives were not lost in vain at the Thirtymile Fire in Washington State. The job of this subcommittee is to determine a new direction for the Forest Service and the Congress as there is a bipartisan effort to work together to prevent future forest fire fatalities. Our hearts go out to the families and the friends of those who died in the Thirtymile Fire in Washington State this summer, and we are particularly anxious to follow up, at Senator Cantwell's request, on the proposal and look specifically at this fire and look at all possible ways that this committee can pursue to try to prevent this kind of tragedy in the future.

Those of you who have attended recent subcommittee hearings know that Senator Craig and I in particular have tried to team up on a bipartisan basis to pursue constructive solutions to the problems of our forests. We have concerned ourselves with the nuts and bolts of forest management, the issues surrounding old growth, the Northwest Forest Plan, and the mechanics of fighting fires under the National Fire Plan.

Today, though, with the Thirtymile Fire in Washington State, we turn our attention not just to dealing with the tragic event, but to a human element of forest policy, the safety considerations that are absolutely critical to saving lives.

On a hot July day in a narrow river canyon this year, a small fire quickly grew out of control. Four firefighters were tragically killed. The Forest Service's own internal investigation of the fire has concluded agency personnel made a number of significant mistakes, ways in which the Federal Government was not a good partner, not a good and effective partner of the firefighters in their dangerous work.

The Forest Service has now released a 31-point action plan to improve safety on the fireline. There is a variety of good steps in the plan including better training of leadership, improved management of the transition from the initial attack to the extended attack, and implementation of measures to fight fatigue.

To make sure that those lives were not lost in the Pacific Northwest, this subcommittee is going to hold the Forest Service accountable on the implementation of their action plan to improve safety on the fireline. We appreciate that there has been an admission of the agency's mistake and that there has been a development of an action plan. Today's hearing in my view is the beginning of an effort to assure a timely and effective implementation of that plan.

The subcommittee is going to want to know, for example, how the Federal Government is going to keep the public informed as to the implementation of the plan. We are going to want to know what assurances will be given to assure that everything is done in the future to minimize the risk of future fire fatalities.

We appreciate the witnesses' being here. We can probably agree that the Forest Service action plan is a step in the right direction, but I am of the view that more may be needed to protect firefighters in the future, and we will examine that as well.

I want to recognize my colleague, Senator Craig, but also make clear that Senator Cantwell has just been relentless in pursuing this issue, making it clear that this was of critical importance to her constituents to try to prevent these kinds of tragedies in Washington State in the future. And to her credit, she has made it clear that she wants the Congress to act so as to prevent these tragedies all over this country. After we recognize Senator Craig, we are going to recognize Senator Cantwell.

Senator Craig.

**STATEMENT OF HON. LARRY E. CRAIG, U.S. SENATOR
FROM IDAHO**

Senator CRAIG. Well, Mr. Chairman, thank you very much. I am a bit gravelly today, but I must tell you that I will excuse your tardiness. The Senator and I are both refugees—refugees of the Hart Office Building. So, we are victims of the current war we are engaging in. I do not say that with any humor at all. The sense of dislocation that has resulted is very frustrating and confusing to all of us and our staffs.

But, Mr. Chairman, let me thank you and Senator Cantwell. The hearing that we are holding this afternoon I think is of critical importance.

Let me also recognize Representative Doc Hastings who is here. The fire occurred in his congressional district, and I know he is concerned about this too.

Each of us needs to understand what is working and what is not working when it comes to the safety of our firefighters. We need to ensure that we do everything possible to secure the safety of the young men and women who work so hard to protect the resource values in our forests.

I want to begin by expressing my condolences to the parents of Jessica Johnson, Karen FitzPatrick, Devin Weaver—Devin's father Ken is with us today—as well as Evelyn Craven, and Tom Craven's parents for the sacrifice and the pain they have had to endure as a result of this accident.

Additionally, I want to thank Jason Emhoff for his sacrifice. I know each of you joins me in wishing Jason a speedy and complete recovery.

While we cannot bring back your loved ones, we can ensure that conditions and training and firefighting policies are changed to do everything possible to guarantee the safety of each and every firefighter who follows.

Mr. Chairman, I expect the Chief of the Forest Service, who is with us today, will help us understand the findings of the Thirtymile Fire investigation, as well as what is being done to en-

sure that we have as few future injuries and fatalities as is possible.

I also know that unless we are willing to sacrifice our forests to fires, which I believe is unacceptable to all of us, that fire suppression work is extremely dangerous and that conditions and weather many times conspire to thwart the best intentions of all involved.

Chief, I want you and your staff to know that I am troubled by the apparent similarities between the Thirtymile Fire and other past events. It suggests to me that your firefighters may not be learning from past mistakes or that your training is not getting through to the younger firefighters or possibly both. I expect you to redouble your efforts and that you will implement an effective program to ensure the safety of our firefighters, our communities, and our forests.

I want everyone to know that I am not interested in a protracted debate over whether or not forest plans or regulations or manual language or the Endangered Species Act are to blame for these or other injuries or fatalities. Nor should we be getting all worked up about whether or not some rules, laws, or policies direct that we do not send firefighters into some areas such as research natural areas or wilderness.

I expect the Federal land managers to use every tool at their disposal within the direction of our forest plans to fight fire in the most aggressive, but safe manner possible. It is not acceptable to me to learn that we are not utilizing every means possible to suppress these fires in a safe manner.

The time to fight fires is before they occur, by removing fuels from our at-risk lands. Even the fuel suppression crews recognize the need, when they responded to the TriData Company's surveys. When a fire does occur, it should be attacked with all available force before it has an opportunity to transition into a high risk, catastrophic situation we all worry about.

Mr. Chairman, I should not have to remind anyone that our firefighter safety can be enhanced if we would direct the Federal land managers to reduce the fuel loading in our forests. We have been debating forest health and now the fire management plan for nearly a decade. I expect the Federal land managers, including Chief Bosworth, to get on with managing our forests. We are long past a point where we can afford to debate whether or not we have a forest health program. We are long past a time when we should be debating whether or not to remove trees through thinning or timber harvest to reduce fire intensity. It is time for you, Chief, and the Forest Service to reduce the fuel loading, reduce fire intensity, and increase the margin of safety for America's best, our firefighters.

Thank you very much, Mr. Chairman.

Senator WYDEN. Thank you, Senator Craig.

Senator Cantwell.

**STATEMENT OF HON. MARIA CANTWELL, U.S. SENATOR
FROM WASHINGTON**

Senator CANTWELL. Thank you, Mr. Chairman. I do appreciate your bringing this subcommittee together, for Senator Craig being

here. I also appreciate full committee chairman, Senator Bingaman, attending the opening of the hearing.

On July 10, near Winthrop, Washington, the Thirtymile Fire burned out of control and four courageous, young people lost their lives. I think it is important to remember that Tom Craven, just 30 years old; Karen FitzPatrick, 18; Jessica Johnson, 19; and Devin Weaver, 21, were just a few of those whose lives have been lost in firefighting.

Today, Congress is taking the first steps in understanding why these tragic deaths occurred and learning and understanding how to prevent them in the future. I believe Congress has a responsibility to the families of the lost firefighters to thoroughly examine the Forest Service's safety performance, to make sure the right questions are being asked and answered, and to ensure that appropriate actions are being taken to protect the lives of firefighters.

We all recognize the courage and commitment of the men and women who fight wildland fires and the important work that the Forest Service and all the five Federal firefighting agencies do on our behalf. We know that firefighting is a dangerous profession.

Nevertheless, we owe it to the firefighters who lost their lives in service to this country and to their communities, and we owe it to their families, to vigorously investigate their deaths, identify the causes, and learn from the mistakes that were made. Only then can we prevent future tragedies from happening.

On September 26, the U.S. Forest Service released its investigative report on the Thirtymile Fire, and in this report, it identified 14 causal factors and 5 influencing factors that contributed to the deaths of Tom Craven, Karen FitzPatrick, Jessica Johnson, and Devin Weaver. The report identified the following causal factors: lack of escape routes and safety zones; inadequate assessment of weather and fuels that contributed to the fierceness of the fire; strategy and tactics that did not adequately consider the existing conditions; failure to maintain clear command and control; fatigue; and missed opportunities for management and personnel to take control. All 10 standing fire orders and 10 of the 18 watch-out situations, the Forest Service's most basic guidelines, were violated and disregarded.

Unfortunately, this situation sounds all too familiar. The causes of the Thirtymile Fire are nearly identical to the causes identified in the Forest Service report on the investigation of Colorado's Storm King Mountain fire, which was issued 7 years ago. Also at that time, similar problems with the Forest Service's training, leadership and management were mentioned.

In the 7 years since the Storm King report, the Forest Service and Federal agencies responsible for wildland firefighting have initiated several significant interagency reviews, conducted numerous studies, and promoted safety as their top priority in wildland firefighting. And yet, here we are today, 7 years and millions of dollars later, investigating another horrible tragedy—one that the Forest Service itself says could have been prevented.

To quote from the Thirtymile report, one crew member, who was at the scene of the fire, was asked about the apparent apathy towards safety guidelines. This crewmember responded, "Everyone knows that these are just guidelines and they can't always be fol-

lowed.” To me this indicates that there is a huge gap between management’s stated position on fire orders, that “we don’t bend them and we don’t break them,” and what really happens when we send young men and women out to fight fires. The gap between stated safety policies and real world practices caused the death of these young firefighters. The question before us today is, why are these safety policies more rhetoric than reality?

In the end, the Forest Service’s management failed these young firefighters. The Forest Service’s safety practices and procedures failed all of us. Congress should not and must not fail these firefighters.

I am concerned that this problem appears to be a cultural or institutional failing in the Forest Service approach to safety. Similar leadership and management training failures continue to place firefighting personnel in harm’s way. In all of these reports, the common element is a lack of accountability and leadership. We must ask ourselves why we are seeing the recurrence of these same causal factors, why the lack of progress in bringing about real change, and how many more reports we are going to have.

The 1995 TriData study, which was commissioned after Storm King, drew upon nearly 1,000 interviews with wildland firefighters and Forest Service managers and formed the basis for 86 goals to improve safety. The TriData study also stated the absence of accountability, a critical element in overcoming a cultural complacency. While the words may not be identical, I am struck by the fact that the ideas behind the TriData recommendation are similar to the safety action plan the Forest Service issued just last month. It appears to me that these recommendations are actually being recycled. They are not new ideas. They simply have not been implemented.

In the wake of the Thirtymile Fire, it has become clear that the Forest Service needs to make implementation a reality. Lives are at stake and things must change.

To make any meaningful change in the Forest Service culture, it is essential to have genuine and meaningful accountability in the system. And I should say here that I know the new leadership in the Forest Service has just been on the job a very short period of time. But there must be more accountability in the Forest Service. We will hear from an agency today that has promised to reform and failed. The current management team will need to take that into consideration. History has shown through different administrations that suggested action plans and promises have come up short, and I am hoping that that will change.

I want to explore at this hearing on the Thirtymile Fire different ways that that might be done. I am going to ask questions about increasing the oversight of the Forest Service, changing training procedures so that they are on par with standards of other public safety organizations, increasing the objectivity of the investigators in charge of probing these tragic accidents, and implementing a zero tolerance policy for safety violation and enforcement within the agency. Our goal is clear and we must not fail. It is time for the Forest Service to take action to increase firefighter safety.

I look forward to hearing the testimony of all those who are here today, and to Congress continuing its oversight and investigation.

We must prevent the tragedies at Storm King and Thirtymile from ever happening again.

I thank you, Mr. Chairman.

Senator WYDEN. I thank my colleague.

Let us now have Congressman Hastings come forward. Doc, we very much welcome you and appreciate your coming and always appreciate the chance to work with you. Go ahead.

**STATEMENT OF HON. DOC HASTINGS,
U.S. REPRESENTATIVE FROM WASHINGTON**

Mr. HASTINGS. Thank you very much, Senator. I appreciate your having this hearing, Senator Craig, and I especially want to thank my colleague from Washington, Senator Cantwell, for requesting this hearing. I know our staffs have worked together on this, and I appreciate that very much. This is an issue of great concern to those of us who live in eastern Washington, but in fact everybody that has potential for wild fires.

We in the West are all too familiar with the enormous impact of forest fires. While most folks experience the flames, smoke, and devastation through their televisions, we experience the impact these fires have firsthand on our communities and our neighbors. The destruction wrought by forest fires can devastate our homes and our environment and, even more tragically, can claim the lives of both civilians and firefighters.

On July 10, 2001, we experienced such a tragedy with the untimely loss of four U.S. Forest Service firefighters in the Cascade Mountains in Washington State in my district. While proud and heroic members of the U.S. Forest Service continued to fight the flames, known as the Thirtymile Fire, unfortunately mothers, fathers, a wife, sisters, brothers, children and friends were informed that their loved ones had died fighting the blaze. Among those lost was an experienced firefighter and a strong, proud husband and a father of two. Lost as well was a young woman known for her faith who at one point in her life saved her own home from a fire. Lost was a youthful athletic woman with a promising future at Central Washington University, and lost was a young man known as a devoted outdoorsman with a keen interest in electrical engineering. Tom Craven, Karen FitzPatrick, Jessica Johnson, and Devin Weaver, brave Americans who gave their lives while serving our country as Federal firefighters.

But amid the sadness and great loss, there were some encouraging moments. Firefighter Rebecca Welch protected the two hikers in her emergency shelter as the flames approached, thereby saving their lives as well as her own. Firefighter Jason Emhoff, who suffered severe burns, is now successfully recuperating. And of course, countless others continued to fight the blaze.

Unfortunately, many of these brave men and women will face additional fires in the years to come. We must always be mindful of their efforts and their bravery when faced with adversity. It is with this effort and dedication in mind that we must work to ensure the safety of the U.S. Forest Service firefighters.

I too, like you, have reviewed the Forest Service report on the Thirtymile Fire, and I have discussed its contents and the findings with the Okanogan and Wenatchee Forest Supervisor, Sonny

O'Neal, as well as with Chief Dale Bosworth. And like most, I believe the report is thorough and that all potential and contributing aspects of this tragedy were reviewed.

But it is out of respect for those who serve day to day fighting fires in my district and across the Nation and in honor of those that we have lost that we must seek to ensure our firefighters are protected by the policies that guide them through these very difficult situations. Because far too many questions remained unanswered, we are compelled to demand answers regarding this event. The safety of our Forest Service personnel and the application of findings of this event to future fires require that we demand nothing less.

Regrettably, we have been in this situation before. 7 years ago, following the tragic South Canyon fire in Colorado, Forest Service officials were asked hard questions about wild fire fighting procedures. At that time, Congress received forceful assurances that changes would be made in both policies and procedures and how those changes would be carried out in the field.

Unfortunately, we are here again today, at least in part, because apparently the Forest Service failed to adequately follow through on those assurances. Much like South Canyon, significant management findings of the Thirtymile Fire suggest that a majority, if not all, of the standard firefighting orders and watch-out situations were violated. In fact, all 10 of standard firefighting orders were violated during the course of the Thirtymile Fire.

Why, if so many rules were violated and compromised during the South Canyon fire and subsequent remedies were recommended, were those rules again violated during the Thirtymile Fire?

Why, after managers, firefighters, and Forest Service personnel received the additional training recommended by the South Canyon final report, were all 10 of the standard fire orders once again violated?

Furthermore, why were 10 of the 18 watch-out situations violated as well?

From South Canyon, we learned that fuel loads were high, that the fire's behavior was unpredictable, that shelter deployments were not engaged properly, and that leadership and management skills were lacking. Sadly these same situations apparently occurred during the Thirtymile Fire.

Our responsibility now is to actively work to ensure these issues are addressed once and for all. We must question why these issues were not remedied then so that the same exact scenario would not repeat itself 7 years later. We need very specific answers to these concerns. The families of the deceased firefighters are entitled to these answers and our remaining firefighters need them for their survival.

I also remained concerned that a mop-up crew, which was the case at the Thirtymile Fire, was engulfed by fire. They had no knowledge it would explode so dramatically. Clearly, none of the firefighters knew they were in such imminent danger until the flames were upon them. Where were the communication breakdowns? Why would a mop-up crew, when fatigued and operating with little experience, suddenly be facing such extreme conditions?

Furthermore, it is clear from both the Thirtymile report and the South Canyon report that the management and approach to these fires were not altered when there was a clear, obvious observed threat.

Some have suggested that in contrast to the South Canyon fire, those working the Thirtymile Fire on July 10 were not at all aware of how dangerous the situation that they were facing was. We must recognize, however, that in some cases whatever preparedness and training available to firefighters, some fires are just so bad that no amount of preparation can prevent major disasters, and sadly that sometimes results in the loss of life.

But that said, should a full-scale breakdown in a communication, training, and management occur, the responsible officials must be held accountable. Let me just repeat that. When these factors break down, the responsible officials must be held accountable.

I hope that today, in addition to discussing these events surrounding Thirtymile, we will have the opportunity to discuss how the Forest Service intends to address the issue of accountability. If the post-South Canyon policy modifications and recommendations were not implemented at Thirtymile, then we need to know where the accountability lies between those two.

Wherever these issues take us, accountability, preparedness, leadership, training, and resolution, we must never lose sight of the reason why we formulate and implement these firefighting policies. The brave men and women who fight our forest fires, protecting our communities from disaster and damage, deserve our unqualified respect and admiration, as well as the comfort of knowing that their Government will make their health and safety the number one priority before sending them into these dangerous situations.

Again, I would like to thank the Senate and this subcommittee for inviting to testify today and I look forward to working with you as to any policies that may be developed that requires our involvement. So, I look forward to working with you, and once again, I want to thank the committee and my colleague from Washington for having this hearing.

Senator WYDEN. Doc, thank you for an excellent presentation. I do not have any questions, but I want to recognize my colleagues. I know that Senator Craig had a request from our colleague from Colorado, Senator Campbell, and I want to recognize him.

Senator CRAIG. Thank you, Mr. Chairman.

Doc, I have no questions of you, but I do appreciate that testimony and your sensitivity to this issue.

Senator WYDEN. Senator Cantwell.

Senator CANTWELL. Thank you. I just had one question. I know, Doc, you hit on the themes of accountability and leadership and training. Has your office thought of any specifics along those lines on the issue of accountability?

Mr. HASTINGS. No, we have not specifically. We are like, I think, a lot of people that have looked at the South Canyon report and this report and compared the two, and wondered why something has not been done.

I guess that I would characterize where we potentially need to go on this is that if something like this tragically happens—and I hope it does not happen again—there simply has to be some sort

of a trail where there is a breakdown. And if there is a breakdown, there has to be accountability. Now, lacking that, if all of the rules by which people are being guided when they fight a fire are not being followed, as you suggested, that they are just guidelines, then maybe there has to be a new look within the agency as to what those rules are with some sort of hammer to make sure that they are carried out.

But beyond that, I have not gone into the specifics. I hope that maybe as a result of this hearing and further action, we can resolve that, however.

Senator CANTWELL. Well, we certainly appreciate your being here today and all your work on behalf of the 4th district of Washington. We know that you are very concerned about this, and your future efforts on this are appreciated.

Mr. HASTINGS. Good. Thank you very much.

Senator WYDEN. Doc, thank you for an excellent presentation. We will excuse you at this time.

Mr. HASTINGS. Thank you.

Senator WYDEN. Okay. Our next panel: the Chief, Dale Bosworth, accompanied by Jerry Williams, Director, Aviation and Fire Management of the Forest Service.

Gentlemen, we are going to make your prepared remarks a part of the hearing record in their entirety. I know that there is always a sort of chromosomal compulsion to just read every word that is on paper. We are going to make that a part of the record. If you could perhaps, Dale, highlight your principal concerns and Mr. Williams as well, that would be great.

**STATEMENT OF DALE BOSWORTH, CHIEF, FOREST SERVICE,
ACCOMPANIED BY JERRY WILLIAMS, DIRECTOR, AVIATION
AND FIRE MANAGEMENT**

Mr. BOSWORTH. Thank you very much. Mr. Chairman and Senator Cantwell and Senator Craig, while I appreciate the opportunity to be here today, I must say that I regret that we are here because of the Thirtymile Fire.

As you said, I have with me Jerry Williams. Jerry is the Director of the Fire and Aviation Management program, and he is going to be the person that is, in part, or largely responsible for implementing a lot of actions that have come out of the investigation report.

I would just like to say a couple of things about a sort of personal situation. Jerry and I have been in our jobs now both for about 6 months. I went on my first fire when I was 17 years old, and for the following 20 years, I spent quite a bit of time on fires. It has been about 40 years now that one way or the other I have been involved in fires.

Jerry spent his whole career in the fire business. He was a smokejumper. He was a fire management officer, and now he is the Director of our Fire and Aviation Management program.

Both Jerry and I have sons who are in the same business. It is really, really important to us that we deal with safety in firefighting. It is important to Jerry and it is important to me both, not just because we have sons that are in this business, but that adds to it and that adds to the awareness, but also because we care a lot about the firefighting family, the Forest Service family, and as a

Government organization, we can do better than we have been doing.

I deeply regret the deaths that occurred on the Thirtymile Fire, and I know that all Forest Service people do. The four brave firefighters that lost their lives, as well as the survivors, I believe truly are heroes. I have a huge respect for them and I have a huge respect for all firefighters that face those dangers every day trying to protect our resources and our communities.

I also know that there is a perception that we are blaming the victims, and I want to say up front, before I go any further, that I do not believe that the victims are to blame. I am confident in the overall conclusions that were reached in the report. The report details a number of conclusions by the investigation team. The members of the investigation team I believe were highly skilled and they represent a whole lot of years of experience. The investigation identified a number of causal factors and those have been discussed already. They have been laid out a bit already.

But I just want to repeat again I guess that the fire again started from a campfire. It started about 30 miles from Winthrop, Washington. We had initial attack crews on the fire. They were replaced by Entiat Hotshot crews, and then a second crew arrived on July 10, and that crew was subsequently entrapped. Fire shelters were deployed and four people lost their lives: Tom Craven, Karen FitzPatrick, Jessica Johnson, and Devin Weaver.

The people that were on this fire I believe were dedicated people. I believe that when the people went to this fire, they intended to do the right things, but they ended up being deceived by the fire, and the situation changed on them pretty quickly.

The real lessons that we have to learn, though, I think are the lessons about things that were not done that should have been done. That is where there is an awful lot of opportunities to try to prevent future fatalities. There were accepted firefighting safety procedures that were not followed. The fatalities and several injuries all occurred during or shortly after the deployment of the fire shelters. But the mistakes that were made were made before the entrapment. Those were the major mistakes, before the entrapment and eventual deployment.

The report states the entrapment of the firefighters occurred because of a failure to recognize a situation that was rapidly deteriorating and because the placement of firefighters were in a vulnerable position. There was a lack of communication about critical information. Leadership had ineffective control and command of operations, and probably most critically, is there was a failure to adhere to safety procedures and the 10 standard firefighting orders and the 18 situations that shout watch out.

Strategies and decisions were made on the fire from the initial attack to deployment did not appropriately reflect the extreme fire danger that existed at the time. It did not recognize the fuel situation in the valley bottom, and lack of adequate safety zones influenced the final outcome.

Transition fires are our most difficult fires. The Thirtymile Fire was in transition at the time of entrapment. When I talk about transition, I am referring to the stage that a fire is escaping the initial attack capability and is growing to become a large fire, a

large project. And those are the times when we have the greatest danger and that we have to put a lot of thought into what we can do to minimize the risk to firefighters during that time.

There was some confusion about why some of the firefighters ended up deploying shelters in different locations. On October 3, I asked the Accident Review Board to conduct a review of the investigation to make sure of what the details were that could be pulled out of that. The board identified two possible scenarios, either one of which may describe why some stayed on the rocks and some were in the road. One possibility is they never heard the orders. The other possibility is that they believed that they were following the orders because they were all fairly close together. We will probably never know with any kind of precision or certainty really what took place at that time. But we do know that communications were not adequate, and we do know that they should not have been put in this situation of entrapment in the first place.

On October 19, we released an action plan to address the changes that were recommended by the report. We are taking actions on situational awareness, assessment and transition, fatigue management, incident operations, fire management leadership, personal protective equipment, and safety management and accountability. I have also asked the regional forester in the Pacific Northwest region to initiate an administrative investigation to consider performance and accountability issues related to what took place.

So, again I deeply regret what took place on the Thirtymile Fire. Again, I want to tell you that the whole Forest Service grieves for the families who lost loved ones in this fire. And I want to reaffirm to you that we have a commitment to do our very, very best to improve firefighter safety and to reduce the potential for risks to our people.

I would be happy to answer any questions.

[The prepared statement of Mr. Bosworth follows:]

PREPARED STATEMENT OF DALE BOSWORTH, CHIEF, FOREST SERVICE,
DEPARTMENT OF AGRICULTURE

Mr. Chairman and Subcommittee Members:

Good afternoon. While I appreciate the opportunity to testify today, I regret that we are here because of the Thirtymile Fire accident. Accompanying me today is Jerry Williams, Director, Fire and Aviation Management, who will be responsible for many of the actions arising out of our investigation report's recommendations.

I deeply regret the deaths that occurred on the Thirtymile Fire; my grief and the grief of the entire Forest Service family are deep and genuine. The Thirtymile Fire was a tragic event. The four brave firefighters, who lost their lives, as well as the survivors, truly are heroes. I have immeasurable respect for them and for all of our firefighters who face danger every day protecting our resources and us.

I am confident in the overall conclusions reached in the report, which details the collective conclusions reached by the investigation team. The members of the investigation team are highly skilled, representing many years of experience. The investigation identified a number of interconnected likely causal factors that we must address. Understanding the likely causal factors and taking all possible action to prevent similar happenings in the future is a critical concern for not only the Forest Service, but also for other Federal, State, and local government fire suppression organizations who must learn from these unfortunate and tragic events.

OVERVIEW

The fire, caused by an abandoned picnic cooking fire, was located 30 miles south of Winthrop, Washington, along the Chewuch River. Firefighters were assigned to initial attack; the Entiat Hotshots relieved the initial attack crew and continued the initial attack effort. On July 10, a second crew arrived that subsequently was en-

trapped. Fire shelters were deployed, but four people lost their lives: Tom Craven, Karen FitzPatrick, Jessica Johnson, and Devin Weaver.

Before I discuss the findings of the report, let me tell you how we respond to incidents when there is a serious accident, such as entrapment and deployment. Within hours, we designate a team of technical experts to meet on-site to make an initial assessment of the facts. Within 24 hours of any fatalities, an initial report is filed. The work continues and a more detailed report is written, 72 hours after the investigation team meets. We do this because it is critical for us to find out major issues and causal factors so that we can quickly notify other firefighters about any preliminary factual findings, which could affect their procedures or operations.

For the Thirtymile Fire, we chartered an investigation team that held its first meeting on July 11, the day after the tragedy. On July 14, the team issued its report that stated the basic facts about the fire. Although there were no immediate remedial measures called for, many of our fire organizations did stop to review procedures and reinforce basic safety messages. A conference call was held with our Regional Foresters and Station Directors to discuss the fire. The investigation report was completed on September 26. Because there were continuing questions concerning why some of the victims and survivors remained on the rock scree above the road, I asked the Review Board to reexamine the factual report and witness statements relating to this question.

SUMMARY OF THE REPORT FINDINGS

The people on this fire were dedicated people. They intended to do the right things, but they were deceived by the fire and the situation changed on them quickly. The lessons to be learned as a result of the fatalities on the Thirtymile Fire are mostly about what was not done that should have been done. The report concludes that there were many opportunities to prevent these fatalities. Accepted firefighting safety procedures were not followed and, as a result, four firefighters lost their lives. The fatalities and several injuries all occurred during, or shortly after, deployment of fire shelters, but the mistakes that led to this tragedy were made earlier before the entrapment and eventual deployment.

The report states that the entrapment of the firefighters occurred because of a failure to recognize a rapidly deteriorating fire situation, the placement of firefighters in a vulnerable position, the lack of communication about critical information, leadership's ineffective control and command of operations, and, most critically, the failure to adhere to safety procedures and Standard Firefighting Orders and all firefighters are taught the "Ten Standard Orders" and "Eighteen Situations that Shout Watch Out." The entrapment of two civilians occurred because of a delayed closure of a potentially hazardous area and failure to successfully evacuate the valley upriver from the fire.

Strategies and decisions made on the fire from initial attack to deployment did not appropriately reflect the extreme fire conditions that existed, nor did those decisions appropriately consider the diversity and complexity of fuel types in the valley bottom. Similarly, features of the valley bottom and the lack of adequate safety zones influenced the final outcome.

Transition fires are our most difficult fires. The Thirtymile Fire was in transition at the time of entrapment and fatalities. Transition refers to a stage of a fire when it exceeds the capability of the initial attack forces to suppress the fire. Transition is usually characterized by rapid growth, spotting across control features and increased intensity. If firefighters are fatigued and the fire makes a transition to a larger fire, the changed fire conditions may not be recognized and good, quick decisions may not be made. On the Thirtymile Fire, our firefighters exceeded our work/rest guidelines.

There was some confusion about why or how the firefighters ended up deploying shelters in different locations. As I stated, on October 3, I asked the Accident Review Board to conduct a review of the investigation to see what details could be discerned about why some of the victims remained on the rocks. The Board identified two possible scenarios, either of which may describe why some firefighters appeared to have chosen not to go the road. One possibility is that those firefighters did not hear the incident commander's directive to come to the road. Another possibility is that the five firefighters had heard the directive to come to the road, but their interpretation of the directive was to be "close" to the road and they believed they were close to the road. Probably we will never know, with certainty, precisely what was said, to whom, and at what time. What we do know is that communications were not clear to all the crew members.

FUTURE ACTIONS

On October 19, I released an action plan to address the changes recommended by the report. We are taking actions on situational awareness, assessment, and transition, fatigue, incident operations, fire management leadership, personal protective equipment, and safety management and accountability. I have directed Regional Forester Harv Forsgren to initiate an administrative investigation to consider performance and accountability issues related to the actions taken to suppress the Thirtymile Fire. I would be happy to keep the Committee apprised of our progress on these actions, especially those related to accountability.

As I said earlier, I deeply regret the deaths that occurred on the 30-Mile Fire; my grief and the grief of the entire Forest Service family are deep and genuine. I reaffirm to you our commitment to do our level best to improve firefighter safety and processes to reduce risks we owe it to Tom Craven, Karen FitzPatrick, Jessica Johnson, Devin Weaver, their families and the survivors and we owe it to the firefighters of the future. I will now answer any questions you may have.

Senator WYDEN. Thank you, Chief. Let us go now to Mr. Williams.

Mr. WILLIAMS. Senator, I do not have any prepared comments. I am here to answer any questions you may have.

Senator WYDEN. All right.

Let me just ask a couple of questions. Then, Chief, I am going to turn it over to Senator Cantwell, who really in my view deserves great credit for constantly pushing to have this committee work for changes. I want to let her know again that I very much appreciate her leadership.

Chief, I know how dedicated you are and how sincere you are in your work and your commitment to professionalism in this area. But I will tell you that when I read the first couple of sentences under Future Actions on page 3 of your testimony—"We are taking actions on situational awareness, assessment, and transition"—that basically sounds like business as usual. Maybe you could tell me in English what that paragraph really means in terms of shaking our policies up here so that we do not have another subcommittee hearing requested by a member of this Senate to look at another tragedy.

Senator Cantwell has pointed out with great specificity the history of what has gone on in this area, and Congressman Hastings has as well. This has gone on for years and years. And now you have come and said you are going to take actions on situational awareness, assessment, and transition, and a variety of other things. I would like you to start by telling me what are going to be the significant and tangible steps that the Service takes so that this subcommittee is not back in another year or 2 holding a hearing on yet another tragedy referring to yet another report from the Forest Service saying that things went wrong.

Mr. BOSWORTH. Well, the first thing is the action plan that the board of review came up with. I am going to ask Jerry here in a minute to be a little more specific on the action plan. There are a number of items in the action plan.

I am briefly talking about things like situational awareness. We have got to do a better job of training people, making sure they are not fatigued, making sure that people are following the fatigue guidelines, making sure that when they are out there, they understand the situation that is going on around them. If their eyes are looking down right in front of them and they are not paying attention to the situation around them, either because they do not have

the training or because of fatigue, then we have got them in a situation that is unacceptable. So, we need to do some work on that with all of our firefighters.

We need to do a better job, when I talk about fatigue, of managing the fatigue guidelines. We are learning by working with the Department of Defense that after a certain number of hours without sleep and working hard, that judgment is diminished a significant amount. We cannot afford to have people out there in a dangerous situation with 30 hours of work with no sleep. We need to manage that better.

We have accountability issues that we have to deal with, and we need to start doing accountability before we have a fatality. We need to be dealing with accountability every day on every fire on every situation so that when we find people that are not following the 10 standard firefighting orders or they are not following the other guidelines and standards that we have, that we take action at that time and not wait until people are in the position where they are entrapped in a fire.

So, those are a few of the things, and I can have Jerry go through more specifically the action plan, if you would like to hear some of those things.

Senator WYDEN. Yes, I would like to hear as much as you all want to talk about that is specific about what changes are going to be made because when I read that paragraph under future actions and am told about incident operations, situational awareness, assessment, transition, fire management, leadership, that is just boiler plate that could have been taken out of 50 hearings that have been held on this issue in the past. What we are going to be doing—and thank goodness, Senator Cantwell is going to keep the heat on on this issue—is we are going to stay with it until there are real and significant changes being made.

So, Mr. Williams, why do you not take a crack at that.

Chief, what I am going to do at the end of Mr. Williams' answer is make a request to you, and I am going to hold the hearing record open for 2 weeks. I would like you to furnish specifically the concrete steps that will be taken to describe what is going on in that first paragraph under Future Actions, because I think we have got to have the specifics. Is there any problem getting me that within 2 weeks?

Mr. BOSWORTH. No. We could give you a copy of the action plan and a copy of the subsequent work that has been done on that.

[The following was received for the record:]

U.S. DEPARTMENT OF AGRICULTURE,
FOREST SERVICE,
Washington, DC, January 11, 2002.

Subject: Implementation of Thirtymile Fire Accident Prevention Plan Action Items
To: Regional Foresters, Station Directors, Area Director, IITF Director, and WO Staff

Enclosed is the Thirtymile Accident Prevention Plan and the supporting documents. Integration of these Action Items into the Directives System, training curricula, and standard practices will take time. However, in order to ensure wildland firefighter safety, it is imperative that we take certain actions prior to the next fire season. Please refer to the text of the Accident Prevention Plan for description of each action item below.

This letter addresses implementation of items A-1, A-3b, A-4, A-8a, A-12, A-14, A-15, A-22, A-27, and A-29.

Action Plan Items A-1, A-4 & A-8a

A draft Transition Fire Guide is enclosed. This guide will be shared with all Type 3, 4, & 5 Incident Commanders. Review of this guide should be a part of your annual refresher training:

Local agency administrators are required to convey their expectations on incident management to their Type 3, 4, & 5 Incident Commanders. Those expectations should include as a minimum:

1. Provide for the safety and welfare of all personnel and the public.
2. Develop and implement viable strategies and tactics for the incident.
3. Monitor effectiveness of the planned strategy and tactics.
4. Disengage suppression activities immediately if strategies and tactics cannot be implemented safely.
5. Maintain command and control of the incident.
6. Use local rules and specific criteria to determine when a fire has moved beyond initial attack.

Action Plan Item A-3b

- a. every fire line supervisor will be issued a "pocket card" for the fuel types on their home unit. All fire line supervisors will be issued a pocket card before deployment on an assignment by the receiving unit.
- b. Each unit will post their "pocket card" on the Pocket Card web site at www.fire.blm.gov/nfdrs.

Action Plan Item A-12-a, A-12-b

The National Mobilization Guide will include direction to dispatch centers that will ensure all resources know the name of the assigned Incident Commander and announce all changes in incident command. Geographic Area Mobilization Guides, Zone Mobilization Guides and Local Mobilization Guides should include this direction as they are revised for the 2002 fire season.

Action Plan Item A-14

A complexity analysis will be prepared on every fire at the time of initial attack as a part of the size up. This analysis can be in the form of a checklist similar to the enclosed or developed to meet local conditions.

Action Plan Item A-15

Every fire that has been typed as a Type 3, Type 2 or Type 1 Fire will have a dedicated Incident Commander. Collateral duties will not be acceptable. Unified command, where appropriate, does not violate this requirement.

Action Plan Item A-22

The Chief, Regional Foresters, Forest Supervisors, and District Rangers will personally communicate their expectation of leadership in fire management. This will be completed prior to fire season and in conjunction with National Leadership Team meetings and annual fire schools.

Action Plan Item A-27

Every fire line supervisor will be issued an Incident Response Pocket Guide (PMS#461). Page 1 of the guide contains the National Wildlife Coordinator Group endorsed risk management process.

Action Plan Item A-29

Every fire line qualified individual will receive training on entrapment recognition and deployment protocols. This training should be conducted in conjunction with refresher training and/or annual fire schools. The principles outlined in the entrapment avoidance enclosure will be incorporated into next iteration of wildland fire shelter training.

The National Safety Specialist, prior to the 2002 western fire season, will issue guidelines for crew actions in the event of entrapment and in preparation for deployment. These guidelines will include specific actions necessary for entrapment avoidance, safety zone characteristics and selection, crew deployment training and emergency deployment supervision.

Each Unit shall ensure that, upon completion, the above items are documented and reported to the Regional Fire Safety Specialist.

The items above, as well as the other items in the action plan, should be accomplished as soon as possible. The Fire and Aviation staff unit will keep you informed as actions are completed and the Regions make progress.

If you have any questions or require further clarification, contact Marc Rounsaville at (404) 347-3464 or mrounsaville@fs.fed.us—

DALE N. BOSWORTH,
Chief.

Senator WYDEN. Mr. Williams.

Mr. WILLIAMS. One of the common denominators I think with this fire and some of the earlier tragic fires that you have referred to is this whole business of transition management. Again, this is the kind of fire that is moving beyond initial attack. It is a fire that at some point we thought we controlled and no longer control, and it is on its way to a large, dangerous fire.

One of the ironies in the wildland fire community is that we have strategies in place to deal with initial attack fires. You see that in our budgets, in the NFMAS, and in our most efficient staffing levels. We also have strategies in place to deal with large fires, and that is what incident management teams are all about.

Senator WYDEN. So, is something going to change in this area known as transition management that is not being done today?

Mr. WILLIAMS. Yes, sir.

Senator WYDEN. What would that be?

Mr. WILLIAMS. We are putting together a group right now that is developing fire danger thresholds for units across the country, and we are going to use those fire danger thresholds to guide judgment in dealing with transition fires. Number one—

Senator WYDEN. That I think human beings can understand. So, as you face the question of these transition policies, you are going to set in place an early warning system, so to speak, so we will pick it up earlier. Is that right?

Mr. WILLIAMS. That is correct. There is going to be not only an early warning system, but we will also introduce operational protocols to do something different, that we are modifying tactics and strategies as the fire is changing.

Senator WYDEN. Well, that is the kind of thing we would like to know within 2 weeks, Chief, what those operation protocols would be in addition to the early warning system.

The only other question I had for you, Chief, is I think that this issue is so important that we are going to need regular briefings from the Service, not just the paper but regular briefings, and Senator Craig has indicated that he agrees with this request, as well as Senator Cantwell. Can we agree, the subcommittee and you, that we will get briefed on how the implementation of these changes are being made in a verbal briefing every 60 days until we have got these changes in place?

Mr. BOSWORTH. We would be very happy to do that. We will commit to doing that.

Senator WYDEN. Good.

At this point, I am going to turn it over to Senator Cantwell and again thank her for making sure that this is brought to our attention. Senator Cantwell, thank you for doing this.

Senator CANTWELL. Thank you, Mr. Chairman, and thank you for the committee's ongoing commitment and oversight of this issue.

Mr. Bosworth, if I could ask you a few questions about the similarities between the Thirtymile Fire and the Storm King Fire, and if we could put up the first chart.

[Chart.]

Senator CANTWELL [presiding]. You can see from this chart that there are several factors here that were cited as failures in the Storm King Fire that happened in 1994, and were specified in the report on the incident: command/control failures; lack of management intervention; management did not adapt to changing conditions; management ignored watch-out situations; environmental factors ignored. Those are the same management failures, if you will, that are cited here at the Thirtymile Fire. At least that is what your investigative report has come up with.

So, my question is, do you believe that we did not learn the lesson from Storm King, as it relates to the fact that there have been repeated failures in these key areas, or at least in certain fire management situations? Don't you think that these failures are the things that we know can go wrong and that they should have been at the top of the list of things to watch out for?

Mr. BOSWORTH. I would agree certainly that these are things that should be at the top of the list. I would agree that there is additional accountability that needs to be included in what we do.

But I would also say that it is hard to know how successful we were after Storm King. We had two or three significantly difficult fire seasons where we do not know how many people our actions might have saved after Storm King from the things that we learned. Now, obviously, we did not learn them well enough with what took place on Thirtymile. One of the things about implementing the safety plan that sometimes gets difficult is you only know when you are not successful. It is hard to tell when you are because you do not know if our actions are the reason or not the reason.

But I do know that there has been a high degree of attention after Storm King to a number of these items, but you cannot slip up at all. When you have a bad situation, you cannot slip up at all.

Senator CANTWELL. So, I want to make sure I understand because I think part of this issue, at least for me, is figuring out where the Forest Service is in terms of safety and understanding the problem. You have to understand the problem first to correct it. I look at this chart and it seems to me that there is a gross negligence in understanding these issues.

Regarding your comment about the fires that have happened in which people may have acted in a proper way: I would assume that you would keep some sort of data and information on fires that may have happened in between 1994 and 2001, and how well the management teams performed in implementing the changes in safety practices that have been recommended.

Mr. BOSWORTH. Yes. We do keep good track of the number of fires that we have. Jerry, do you want to add to that?

Mr. WILLIAMS. I think in this business, because it is a high risk/high consequence business, we tend to focus problems or their solutions in one of three categories. Do we have adequate policies in place to provide for the safety of our firefighters? Are the procedures put in place to provide for the firefighters' safety? And fi-

nally, are performance expectations known and observed for all of our people at the crew level, all the way up to the management level?

Senator CANTWELL. Well, how do you measure that?

Mr. WILLIAMS. What I am indicating is that I believe the policies and the procedures are largely in place. The one place where we are soft is on these transition fires, and we are committed to fixing that. This in many respects in my mind is a performance issue. Did managers and supervisors intervene when they should have intervened?

Senator CANTWELL. Well, if we could go to the next chart.

[Chart.]

Senator CANTWELL. You are saying that you think that the procedures or the policies are in place, but I look at the recommendations. The TriData study, after the Storm King Fire, basically said, "okay, let us do an analysis of why we are in this situation. What are the safety things that need to be improved?" And you came up with a list. I applaud the Forest Service for having that done, but then I look at the recommendations that you are making from the Thirtymile Fire. They are the same recommendations: to develop behavioral based safety programs; improve training for individuals in leadership positions; gather better information on fire dangers; and improve firefighter preparedness and training. They are the same recommendations. We are just making them several years later. So, either we are not implementing them and we do not have a way to measure the implementation—except in the most extreme cases, in which the loss of life—or they are implemented and not working.

Mr. WILLIAMS. I believe a lot of recommendations have been implemented in terms of policy and procedure. Now, whether or not that is being adhered to is another issue and that falls into this whole business of accountability. I believe that is a significant factor for us.

Senator CANTWELL. Well, does it do any of us any good if they are not being adhered to?

Mr. WILLIAMS. No.

Senator CANTWELL. If we have them on the books, but nobody is adhering to them?

Mr. WILLIAMS. No, not at all. But I would also offer that this agency deals with about 10,000 fires every year. We field a fire force of about 7,000 firefighters. The policies and the procedures, the 10 orders, LCES, the 18 watch-outs in many, many cases have saved lives and averted this kind of tragedy.

Senator CANTWELL. So, are you saying that this is a percentage issue?

Mr. WILLIAMS. No. I am saying that any loss of life is unacceptable. I am saying that in my opinion we have a performance issue here. It falls into this whole area of accountability. Chief Bosworth is committed to dealing with the accountability issue not so much after the fact as we are having to do here, but introducing procedures where we deal with accountability before this happens. That might be something as simple as asking a crew where is your escape route, and if they do not know, they are off the line. Or asking

them what is today's weather forecast, and if they do not know one of those 10 standard orders, they are off the line.

Senator CANTWELL. Well, let me ask you then about the issue of training. Do you think the current level of training that the firefighters receive is adequate for personnel to know and understand the safety regulations that you are talking about?

Mr. WILLIAMS. I think it is extremely difficult for a first-year firefighter. My son is 21 years old. He is on his second year in a hotshot crew. These young people, at this point especially, need all the leadership and all the management oversight that we can bring to bear. We do not ask our firefighters to memorize the 10 standard orders, but we do insist that the supervisors and the management oversight people hold those 10 orders firm. When they do not, we know that trouble is in front of us.

Senator CANTWELL. In this instance, some of these young firefighters had—what was it—32 hours of classroom training? They had just been firefighters for a few weeks and were put in this situation. So, are you recommending that we change the training program?

Mr. WILLIAMS. What I am saying is that the training that these folks receive, the 32 hours of classroom training, plus 8 hours of field training, is not adequate for the kind of fire that confronted them. Now, I do not know that we have got any training that is adequate for the kind of fire that confronted those people.

What I am suggesting, though, is that our training does not stop at 32 hours. The training that we do is on-the-job training. We have performance based training regimens where task books and so forth are used to elevate the training and background and knowledge of the people that are put into these situations.

Senator CANTWELL. Mr. Bosworth, how do you believe that we get to a zero tolerance policy within the Forest Service as it relates to safety violations within the work force?

Mr. BOSWORTH. Well, that is a good question and I am not sure that I have a direct answer for how we get there except that we need to get there. I think, first, it has to do not just with fire but with our whole Forest Service safety program and are we giving the proper attention to safety at the top of the organization, at the top of the regional organization in the forest and the district, and are we following up then with some of the kinds of things that Jerry was talking about that when somebody does not do that, does not follow the rules, does not follow the safety direction, that they are out. They are off the line. They may be given some time off. They may be removed from service if it occurs, and do that before we have serious accidents.

And I believed this before the Thirtymile Fire, shortly after I came into this job. I believe that we need to take a hard look at our entire Forest Service safety program not just the fire part, although the fire part of it just brings it even more after this year.

I would like to also add that there are other fatalities that just are not acceptable. We lost four other firefighters on Forest Service fires this summer, three in a helicopter crash, one with a snag that fell. Those were just on Forest Service fires. There were another eight people that died in wildland firefighting that were either State or volunteer firefighters in the other agencies.

Senator CANTWELL. Who is accountable for the safety violations that occurred in the Thirtymile Fire? Who is accountable?

Mr. BOSWORTH. Well, it works its way up. Ultimately I am.

Senator CANTWELL. And who else along the way?

Mr. BOSWORTH. Along the way, the regional forester who works for me who has responsibility for the national forest in Oregon and Washington is accountable, the forest supervisor of the Wenatchee and Okanogan National Forests, the district ranger on the ranger district. There are also other people. Then it gets down to the incident commander that was in charge of that specific fire, the fire management officer on the ranger district and the assistant fire management officer on the ranger district, as well as the forest fire management officer. Everybody has a hand in this.

Senator CANTWELL. And what actions were taken to hold those individuals accountable for the failures and loss of life in this incident?

Mr. BOSWORTH. Right now we have got an administrative review we have contracted out, and I have asked the region to do an administrative review. So, we go through due process in taking any kind of administrative action or disciplinary action on people that were accountable, the people that we need to hold accountable for this.

Senator CANTWELL. Mr. Bosworth, has the Forest Service considered looking at the ways other enforcement organizations or safety organizations hold people accountable for safety violations?

I would just add that Doc and I represent a common area in the 4th district of Washington, and I guarantee you if the workers at Hanford committed the same level of health and safety violations, we all would not be here. But there has to be a culture that implements safety standards. So, something is missing here within the firefighting agencies.

Mr. BOSWORTH. Part of the answer to your question is yes, we have looked at that. We have contracted out. I cannot speak as specifically to this as I would like to, but I know that a few years ago there were some contracts with some consulting firms to look at our safety program overall. There has been a number of things that have been done in the last several years to find out what other organizations are doing and to try to improve our knowledge and our record.

I cannot tell you why we did not do them. I was not here. I cannot tell you whether we dropped the ball, whether we implemented some of those and did not implement others. But I know that there have been some outside looks at what we are doing.

Senator CANTWELL. Let me ask you a few other questions if I could. The issue of review of these fire incidents: they have oftentimes been done within the Forest Service. Do you think that there is a need to have someone outside the Forest Service look at these incidents similar to how the National Transportation Safety Board does investigations of airline crashes? Do you think it is necessary for an entity that is more objective about the causes and the severity of the incident to have an independent view on the Forest Service and its safety practices?

Mr. BOSWORTH. I think it is always good to have eyes other than our own look at what we are doing. I believe that the investigation

team that we assigned to this investigation—there was a lot of experience. There were several people that were from outside the Forest Service. The lead investigator was a contract investigator. There was a person I believe from the University of Montana that brought some expertise. Then we also had two people from OSHA that were participating very closely with the investigation team. So, it was not just a 100 percent internal look at ourselves.

On the other hand, I do not want to be defensive about having other people look at other ways of doing it as well. What I want to do is to figure out what is going to work. But again, I think that the problem that we have—and Jerry said it—is more of a performance issue rather than whether or not we are doing a good job of investigating what took place.

Senator CANTWELL. Well, let me ask you one last question. Then I want to get on to our other panel. You mentioned OSHA. OSHA is in the process of doing a review of this incident as well, as I am sure they have in other past fire incidents, because they have oversight in working with Federal agencies. But I am not sure exactly what you do with their recommendations.

Mr. BOSWORTH. Well, we follow their recommendations. I know it has been said by some on occasion that, well, if you do not have some kind of financial fine or something from OSHA that it does not carry much clout, but I can tell you that getting a willful negligence citation from OSHA when someone dies is not something to be taken lightly, and we do not take that lightly.

Senator CANTWELL. But what happens?

Mr. BOSWORTH. Well, again we have the accountability aspect, which is always again after the fact, after somebody has been injured or died. We also have recommendations from OSHA that we follow. We do not take the recommendations from OSHA and just throw them in a drawer someplace. At least all the ones I have been involved with at the region and forest levels where I have worked, we have taken the OSHA recommendations very seriously.

Senator CANTWELL. Well, I think that there is some question as to how we can come up with these same caused factors, these same recommendations for change and be in the same place if these OSHA recommendations have been implemented. So, I would be curious to see how we might take that further. I find it hard to explain to my constituents in the State of Washington or in Yakima why a Yakima business has to comply with OSHA standards, is penalized when those OSHA standards are not met—whether by losing jobs or being financially fined—and yet this Federal agency that we guarantee is going to implement health and safety standards is not accomplishing the job.

So, I would like to further dialogue with the Forest Service about a variety of issues: job training and the need to increase it; the need for independent oversight when incidents occur; and the issue of accountability. I am taking you at your word and with sincerity, especially since you are new on the job as Chief, that you want to institute a culture of accountability.

But my opinion, in reviewing this information and reviewing the data, the Forest Service has a cultural problem. The necessary safety standard is not culturally there. I guarantee you it is not the same standard that is in place at the Hanford Nuclear Reservation

or in air transportation or other sectors in which people know that they are going to be held accountable. I think that that is where we need to move the Forest Service.

Mr. BOSWORTH. Well, again, I think that we need to learn from this. I will tell you again that I am committed and I know Jerry is committed to making the kinds of changes, accountability, as well as the other changes that need to be made, to minimize the risk to firefighters.

I do not want to leave here without saying, though, that firefighting is dangerous and that does not make it okay to lose people, but it just means that we have to be that much more vigilant in terms of making sure that we do everything we can to minimize the risk to our firefighters.

Senator CANTWELL. Well, thank you, Chief Bosworth and Mr. Williams, for your testimony today. We appreciate your being here.

As the chairman mentioned, we will be holding open the record, so I am sure there probably will be other questions from other members. If you could get those back to us in writing, we would greatly appreciate it. I am sure that my office, as well as some of the others, would like to explore more ways with you besides the continuing dialogue with Congress on how we can make sure that safety plans actually are implemented.

I would like to call up our next panel: Mr. Philip Schaenman, president of the TriData Corporation, which conducted the SAFE study we have been discussing here. Mr. Schaenman is going to be joined by Mr. Paul Gleason, professor of Forest Science at Colorado State University. Mr. Gleason was part of the Nation's Federal firefighting force for more than 20 years before taking his present position, so I look forward to comments from both the academic world and the world of frontline firefighting.

Finally, we have Mr. Ken Weaver of Yakima, Washington, as well as other members of the Weaver family, but I will let him introduce them. Mr. Weaver's son Devin was one of the four brave young firefighters killed in the line of duty at Thirtymile Fire this July. I believe that Mr. Weaver has a very compelling story to tell. I am glad that he is here today, but I give my condolences to his family and am sorry that they have now had to take up this cause in the aftermath of the Thirtymile accident. But, Mr. Weaver, I appreciate your being here today. If you want to take this opportunity to introduce the rest of your family here.

Mr. WEAVER. Thank you, Senator Cantwell. My name is Ken Weaver. This is my wife Barbara, my oldest daughter Jeanette, and my youngest daughter Andrea. Devin was 21 years old, between the two daughters. Thank you.

Senator CANTWELL. I think, Mr. Schaenman, we are going to have you first.

**STATEMENT OF PHILIP SCHAENMAN, PRESIDENT,
TRIDATA CORPORATION, ARLINGTON, VA**

Mr. SCHAENMAN. Thank you. Just a quick way of personal introduction. I am Phil Schaenman. I am president of TriData Corporation, which is a subsidiary of System Planning Corporation in Arlington, Virginia. Firefighter safety is one of our specialties within

a broader range of work on public safety and national security issues.

Before I started TriData 20 years ago—we are celebrating our anniversary next week, as a matter of fact, 20th anniversary—I was the associate administrator of the U.S. Fire Administration, and before that I worked on the manned space program, which actually was one of the largest safety engineering programs that we have ever done in this Nation, if you think about it that way.

After the South Canyon fire in 1994 that killed 14 firefighters, there was a widespread feeling that despite all the attention that had been paid to safety, we were seeing the same kind of problems over and over again killing firefighters.

In 1995, the five Federal agencies that did most of the wildland firefighting decided to have an in-depth multidisciplinary study of firefighter safety conducted by an outside organization, and I ran that study. Its goal was to identify the most important issues underlying wildland firefighter safety and then recommend in detail what to do about them. It was an unusual, even courageous Federal study. It did not pull any punches. Our team was given academic freedom, and it included sociologists and psychologists who were expert on how to change the culture of workplace safety.

In the first phase of the study, we interviewed in person 300 firefighters and did a written survey of another 700, for a total of 1,000 that you mentioned earlier. The firefighters were extremely candid. They spoke from the heart. There was remarkable consistency across all five agencies, across regions of the country, across all ranks in firefighting that we heard from.

They raised hundreds of specific problems, and we made over 200 recommendations in response. And that large number of safety issues is a problem itself because it is difficult for humans to keep checking on so many things all the time, and it is also difficult for agencies to deal with such a larger number of problems. It is not just a few things. There may be a few things that come out of an individual fire investigation, but when you look across fires, there are many, many things.

The firefighters said there were many strengths in the national approach to wildland firefighting, but let me focus in the short period of time I have on what some of the most important safety issues were and what some of our key recommendations were.

The first was to ensure that the people out in the wildland firefighting leadership positions are qualified, and to do that, we recommended better screening of candidates for their leadership aptitude and then training them better in decision making under stress and how to improve fire ground situational awareness. And that means practicing a large variety of scenarios, and it is expensive training and a lot of people have to be involved in it.

To promote accountability, we recommended including safety as part of employee performance evaluations, and we recommended giving appropriate career penalties when safety practices are violated. This was done for the astronauts. It is done in NFL sports. It is done on the decks of aircraft carriers, and it can be done in firefighting.

To rebuild the level of wildland firefighting experience, which has deteriorated, we recommended developing a strategic human

resources plan to keep the talent pipeline filled at all levels, and we encouraged making a special effort to retain the more experienced fire leaders because they have better judgment in emergencies.

We recommended that training be made more realistic and more visual to compensate, in part, for the lack of field experience. That high quality training is critical both to teach safety practices and the proper use of safety equipment, such as shelters. The firefighters have to be given special training to respond properly and without hesitation in life-threatening situations.

Another safety goal was that radio and face-to-face communications be not only heard but understood, especially the messages critical to safety. The firefighters have to learn to ask questions when their orders are unclear, and the senders of the messages have the responsibility to ensure that the message was understood, perhaps similar to the way pilots and air traffic controllers do. When you say move from area A to area B, you say, right, area B, understood.

It is also important that all crews have radios so they can immediately receive a message such as evacuate now.

Changing the culture of communications is one way to change the culture of safety. Another way is to make it not just acceptable for firefighters to raise concerns about safety, but a professional responsibility to do so, again as exists with air crews and ground personnel.

Yet another safety principle that is important is to avoid pushing individuals beyond their capabilities. Crew supervisors need to watch for symptoms of fatigue, and they have to accurately report the level of fatigue when their crews first report in.

The crew supervisors need to work at building crew cohesion so that the crews not only work well together, but they respond together in emergencies.

We need to better target and evaluate the safety programs among all this myriad of issues, and we need a better data system for reporting injuries and also near misses.

Finally, we need to improve the safety of the wildlands through expanded fuel treatment programs and to better educate the public who choose to live in wildland areas so they can reduce fire risks themselves. These actions would improve not just the public safety, but also reduce firefighter injuries.

Over 1,000 firefighters died in the decade before September 11, and 300,000 were injured. They routinely turn in heroic performances to save people and our natural resources.

And there have been many positive steps since our study. We just started a follow-up study for the Forest Service.

We can do even better if the safety program gets adequate resources and the safety and health functions are given more visibility on organization charts. All of this training, all of these things cost money and they have to have adequate resources, otherwise the safety programs will not be taken seriously and they will not be adequately effective.

I think we have a moral obligation to listen to the thousand firefighters who poured their hearts out to us and an obligation to honor the firefighters who gave their lives. And on behalf of all

those firefighters, I thank the committee for holding this hearing, and I would be glad to answer any questions.

[The prepared statement of Mr. Schaenman follows:]

PREPARED STATEMENT OF PHILIP SCHAEENMAN, PRESIDENT, TriDATA CORPORATION,
ARLINGTON, VA

My name is Philip Schaenman. I am President of TriData Corporation of Arlington, Virginia. TriData specializes in a wide range of public safety issues, from fire safety to bioterrorism surveillance. Prior to TriData, I was the Associate Administrator of the United States Fire Administration from 1976 to 1981. Before that, I worked as an engineer on manned spaceflight safety issues.

Following the tragic 1994 South Canyon, Colorado fire in which 14 federal wildland firefighters died, there was a great deal of soul searching in the wildland firefighting community. Despite the attention paid to safety, there still were unsolved problems and underlying factors that led to recurrence of the same kinds of tragic firefighter losses as had occurred in the past.

The five federal agencies that do most of the wildland firefighting are the Forest Service, Bureau of Land Management, National Park Service, Bureau of Indian Affairs, and Fish and Wildlife Service. Together they decided to support an in-depth, multidisciplinary examination of firefighter safety by an outside organization. It was called the "Wildland Firefighter Safety Awareness" study but was even broader in scope than the name implies. My company, TriData, was competitively selected in August 1995 to start what turned out to be a five-year effort to identify in detail the many facets of the wildland firefighter safety problem, and then recommend what to do about it. This was a highly unusual, even courageous, federal study that pulled no punches. It was guided by Bill Bradshaw of the Forest Service. The contract officer came from the Bureau of Land Management. A multi-agency steering committee guided the general approach, but we had total academic freedom when it came to describing the findings and making recommendations. Our study team included sociologists and psychologists expert in safety issues, as well as wildland fire safety experts. I led the study.

The study had four phases: identifying the safety problems in depth; developing a vision for the future; describing how to get from here to there; and then helping with implementation.

In the first phase, we interviewed in person 300 federal wildland firefighters of all ages and ranks across all regions of the nation, and also many safety experts. We solicited their perception of the biggest safety issues, and what to do about them. We followed that up with an in-depth, written survey of another 700 federal wildland firefighters, for a total survey of 1,000 firefighters. The written surveys helped rank order the issues identified. The firefighters and fire program officials we heard from were extremely candid and spoke from the heart. There was remarkable consistency in what they told us about safety issues across the nation. They raised too many specific problems to describe them succinctly, which is a major problem itself; the huge challenge to improving safety is that it is necessary to pay attention to a great many details and to have the resources to adequately train, adequately equip, and adequately staff the entire wildland firefighting force. It also is necessary to give adequate visibility and authority to the safety and health managers who oversee safety programs, or the function is not taken seriously by the workforce.

We found that the broad strokes of safety practices and policies are there, but it is difficult to get humans to pay attention to the myriad of safety issues all of the time. Overall, the wildland firefighters have had a fairly good safety record relative to the hazards of the job. For example, despite the very high physical demands of wildland firefighting, very few succumb to heart attacks on the job, primarily because of good fitness screening programs.

Three-quarters of the wildland firefighters we surveyed rated the interagency wildland firefighting approach as good to excellent. They noted a long list of strengths of the current national system. A summary of them is attached. (It is Table 1, Executive Summary, Phase 1, Wildland Firefighter Safety Awareness report.)* They said that the general approach should be kept but it should be fixed to work better.

Now let me summarize the safety problems they identified. The problems fell under the broad headings of improvements needed in the organizational culture, such as making it acceptable to raise safety issues; improvements needed in fire-

*Attachments have been retained in subcommittee files.

fighting leadership, especially in the middle levels; attention to human factors, such as maintaining situational awareness literally in the heat of battle; and external influences on safety, such as the condition of the forests and the actions of the people who are building homes in wildland areas.

In Phase II of the project, completed in January 1997, we defined a vision for the future—what the safety environment ideally should look like. Ultimately, 86 goals were identified, grouped under broad categories such as making improvements in firefighting strategy with limited resources; improving accountability of firefighters at all levels; increasing experience of the firefighting workforce; further improving physical fitness; improving flow of critical information to crews; increasing training at all levels; addressing the fatigue problem; and addressing the human and psychological factors that sometimes stop firefighters and their supervisors from paying as much attention to safety as they should. The goals were discussed and accepted by the fire directors of the five major wildland firefighting agencies before we moved on to Phase III.

In Phase III of the study, completed in March 1998, we developed specific strategies to meet each of the goals. We titled the Phase III report, “Implementing Cultural Changes For Safety,” because without the cultural changes, many of the other changes were not likely to follow. Our multi-disciplinary team made suggestions on how one could truly change the culture in a way that safety was imbedded in everyday actions. We ultimately made over 200 recommendations for specific implementation strategies to achieve the 86 goals. (Attached to this Testimony is a complete list of the goals and the suggested implementation strategies.) Let me give you a few examples.

To assure that people in the leadership positions at all levels were qualified, the study recommended better screening of potential leaders from crew supervisor up through agency administrators, and then training them in decision-making under stress, and how to improve situational awareness and be prepared to handle the unexpected; one can train for those skills.

To promote accountability for safety at all levels, we suggested including safety as part of employees’ performance evaluations, and giving appropriate penalties when safety practices are violated. Penalties for safety violations are given in NFL sports, aircraft carrier operations, civilian air operations, and manned space flights. It can be done in firefighting, too. Accountability needs to be taken seriously.

To rebuild the level of firefighting experience, which has deteriorated over the past decades in part because of the lack of incentives for experienced fire managers and firefighters to stay in firefighting, we recommended developing a strategic human resources plan and working to keep the talent pipeline filled at all levels. We encouraged making a special effort to retain experienced fire leaders and firefighters, who tend to have better judgment in emergencies. That is easy to say but a big effort to do.

We recommended that training be made more realistic to compensate in part for the lack of field experience. This includes more training under field conditions, use of more visual materials, and use of virtual reality simulators like the military uses. High quality, repeated training is critical to explain safety practices and the use of safety equipment such as shelters. Training must also include responding properly and without hesitation in a life threatening situation.

Another important safety goal is that communications be clear and understood, especially the critical safety messages in the field. Firefighters should ask questions when radioed or face-to-face instructions are unclear. There should be feedback from receiver to sender, similar to the way pilots and air traffic controllers do it: a short piece of the transmitted message is repeated to confirm that the message is understood. And it is important for all crews to have radios and to be continually in reach of safety information such as when to evacuate.

Changing the nature of communications besides being important in its own right is a key to changing the culture. Another way to change the culture is to make it not just acceptable to raise concerns about safety, but a professional responsibility from the line firefighter up the chain of command. We recommended cultivating an attitude that practicing safety is equivalent to being professional.

Yet another important principal is to avoid pushing individuals or crews beyond their capabilities. Crew supervisors must watch for symptoms of fatigue and dehydration, and try to prevent them. The supervisors must accurately report the level of fatigue of their crews when reporting in.

It is also important for crew supervisors to explicitly build crew cohesion so that they not only work well together, but also share safety responsibility and respond properly together in extreme emergencies.

And we recommend improving the comprehensiveness and reliability of safety data, and using it to evaluate programs and detect emerging problems.

Finally, one of the most frequently mentioned aspects of safety we heard from wildland firefighters was to improve the safety of the wildlands through expanded fuel treatment programs. They also want to educate the public on prevention and on the limitations of what firefighters can be expected to do. If people insist on building in wilderness areas that frequently experience natural fires, they should not expect the firefighters to risk their lives to save their homes.

* * * * *

Over 1,000 urban, rural, and wildland firefighters died in the decade ending before September 11th. Wildland firefighters and urban firefighters routinely turn in heroic performances to save people and our natural resources.

There has been an enormous amount of attention paid to safety. There already are many good safety practices. We know that many additional measures have been taken as a result of our study and the other studies and investigations that it built on. The many issues can't all be dealt with at once. But we can go much further than we have with better training, better equipment, and better information—all of which leads to safer firefighting. The safety problem needs adequate resources, adequate attention, and visibility.

As project manager of the study, I had the unique privilege of having access to all of the confidential comments the firefighters made, including survey forms returned with smudges from fire sites. I believe we have a moral obligation to listen to them. This Committee is doing that, and I thank you for it on behalf of all the firefighters we heard from.

Senator CANTWELL. Thank you, Mr. Schaenman. I want to let the rest of the panel speak, and then we will do questions. So, Mr. Gleason, you are next.

STATEMENT OF PAUL GLEASON, PROFESSOR OF FOREST SCIENCES, COLORADO STATE UNIVERSITY, FORT COLLINS, CO

Mr. GLEASON. It is an honor to be able to address you today on behalf of firefighter safety.

From 1964 until January of this year, my job was as superintendent, as a firefighter on an interagency hotshot crew. I took relatively inexperienced firefighters into hostile situations, volatile firefighting where my responsibility was their health and welfare, and I had to make critical decisions, technical decisions that would ensure their safety. It is that that I want to address and talk with you about today.

One thing that is important at a high price we have learned these lessons, the fire orders, the 18 situations, LCES, and a number of other guidelines and rules to ensure that firefighters return home after the firefight. And I do not think we need any more rules. We do not need any more guidelines. We have what is needed.

What we really do need is experienced fireline supervisors that are skilled in risk management, not governed by orders and rules, but skilled in risk management, much like the military. And risk management is based on a common set of values. I think that right there is extremely important. We do not have the basic framework we need to develop risk management from.

Where firefighters seem to be most vulnerable is when a decision is to be made to engage or disengage from their location in a highly dynamic environment. And this is an environment where just the slight angle of the sun or a change in moisture or a change in wind will turn the whole situation into a volatile one.

Individuals making decisions can only frame them in the context of their own unique experience, and it is a lack of that experience at times that we do run into out on the fireline. Tactical fireline

decisions cannot always be supported by computer models. Operations in the wildland fire environment are often too complex for that.

Since 1994, in the wake of South Canyon, I have noticed a re-focusing of training toward decision making and leadership skills. The firefighters have enlisted the advice of organizational scientists such as Karl Weick and psychologists such as Gary Klein to better understand firefighter safety. And I believe this work is apparent in the current and planned leadership training. Still, sometime outside the training environment, one individual will be called upon to make the correct decision, and are we sure next summer the newly trained leader will make the right call?

One system in place to help decision makers is the 10 fire orders and the 18 watch-out situations. These are supposed to provide a mental checklist that will prevent injuries and fatalities. However, I feel the orders are too numerous and cumbersome to be useful in a fast-changing atmosphere of wildland firefighting. Perhaps that is why some firefighters see these as guidelines and not orders to be obeyed.

In a less complex system, embracing risk management, the skills in risk management could be used that would still encompass the spirit of the 10 and the 18. For example, one such system is the use of LCES as a risk management tool, LCES being lookouts, communications, escape routes, and safety zones. Already that is being used by some wildland firefighters, but I believe LCES should replace the 18 and 10 as a basic framework for fireline risk management.

Fireline decision making has been likened to a slide projector carousel of experiences, where each new situation faced adds a new slide to that carousel. When an experienced decision maker is faced with a new decision, they mentally go through their slides to help them understand the current situation. Initially the new firefighter has no slides and only through experience will they add more. During this time, a safety conscious leader must mentor the new firefighter. This is especially necessary for inexperienced people in fireline leadership positions.

What can Congress do to help firefighter safety? First, I believe it is important to realize that often these critical decisions are being made by nearly entry level employees who are in the process of assembling their slide trays. And are we comfortable with these inexperienced leaders making life/death decisions under stress when they are first out there on their own?

Second, we must take every opportunity to send our firefighter trainees to the firelines where they can gain real fire experience under a strong, field-proven supervisor. Here leadership and decision making skills can be observed and trained firsthand. In this situation, we have a mentor who can provide a backup slide for the trainee. There is especially a need for experienced people to fill this mentor role, but all too often experienced people get pulled off the fireline and into management positions, trading chainsaws for coffee cups and looking at spreadsheets instead of flames. This practice takes away from the field exactly the people who most need to be there to train tomorrow's fireline supervisors. The U.S. military employs a similar technique successfully. This strategy will in-

crease suppression costs somewhat. However, in light of the alternative, the cost is insignificant.

Wildland firefighting is unique in that it is accomplished through manual labor, using some of the most basic of tools, shovels and axes, while at the same time, this work occurs in a highly dynamic environment where often there is only limited information. Firefighter safety, at some moment in the future, will be entirely determined by the leadership and decision making skills of the individual in charge. I ask that this need be addressed with the urgency it deserves.

Today on behalf of all past, present, and future wildland firefighters, I thank Congress for their efforts to improve firefighter safety, and I ask for your continued vigilance and support for those firefighters who risk their lives on behalf of the Nation. I thank this committee for the opportunity to speak here today on this important issue.

[The prepared statement of Mr. Gleason follows:]

PREPARED STATEMENT OF PAUL GLEASON, PROFESSOR OF FOREST SCIENCES,
COLORADO STATE UNIVERSITY, FORT COLLINS, CO

It is an honor to be able to address you today on behalf of firefighter safety. My name is Paul Gleason. I am currently on the faculty at Colorado State University where I teach fire ecology and fire management. I spent most of my career as a supervisor of an Interagency Hotshot crew taking relatively inexperienced firefighters into volatile wildland wildfires. Their safety and well-being was my responsibility. Along with concern for my crew's safety, I believe on the fireline I was aggressive in accomplishing suppression objectives. Often I had to make critical decisions in tactical situations that potentially threatened my crew's safety. It is the fireline supervisor's decision-making ability in the dynamic wildland fire environment I want to focus on.

Wildland fire fatalities are not a new event. Even prior to the infamous 1910 fires, history records numerous lives lost while trying to contain and control wildfires. Within the last fifty years: 1949 Mann Gulch, 12 smokejumpers; 1956 Inaja, 11 firefighters. And 10 years later Loop, 12 members of a hotshot crew lost their lives while building a fireline downhill into a chimney. Recently, 1994 South Canyon, 14 firefighters; smokejumpers, hotshots and helitack members lost their lives; and of course the Thirtymile tragedy which brings us here today.

At a high price, wildland firefighters have learned how to recognize signals in their environment and they have learned how to work safely in their dynamic environment. They have assembled countless operational procedures, orders, and guidelines to ensure firefighters return home safely. They don't need help in assembling more—I personally don't think there needs to be more. What is needed is experienced fireline supervisors. People who know enough to make tough decisions in the dynamic and dangerous wildland fire environment.

Where firefighters seem to be most vulnerable is when a decision is made to engage or disengage from their location in a highly dynamic environment; An environment where only a slight change in the angle of the sun, or the humidity, or wind can change a fire's behavior. Individuals making these decisions can only frame them in the context of their own unique experiences. Tactical fireline decisions cannot always be supported by computer models. Operations in the wildland fire environment are often too complex for that.

Since 1994, in the wake of South Canyon, I have noticed a re-focus in training toward decision-making and leadership skills. Firefighters have enlisted the advice of organizational scientists (Karl Weick) and psychologists (Gary Klein) to better understand firefighter safety. I believe this work is apparent in the current and planned Leadership training. Still, sometime outside the training environment, an individual will be called upon to make the "correct" decision. Are we sure next summer the newly trained leader will make the right call?

One system in place to help decision-makers is the 10 Standard Fire Orders and the 18 Watch Out Situations. These are supposed to provide a mental checklist to prevent injuries and fatalities. However, I feel the orders are too numerous and cumbersome to be useful in the dynamic and fast-changing atmosphere of wildland firefighting. Perhaps that is why some firefighters see the 10 & 18 as "guidelines

that cannot always be followed” rather than orders to be obeyed. I think a less complex system, based on predetermined norms and values of the wildland fire industry, could be used that would still encompass the spirit of the 10 & 18. One such less complex system uses the acronym LCES—Lookouts, Communication, Escape Routes, and Safety Zones. This is already used by some wildland firefighters, but I feel LCES could officially replace the 10 & 18 as the primary safety guideline for fireline decision making.

Fireline decision-making has been likened to having a “slide projector carousel of experiences” where each new situation faced adds a slide to the carousel. When an experienced decision-maker is faced with a new situation, they mentally go through their slides created in the past to help them understand the current situation. Initially the new firefighter has no slides and only through experiencing more fire situations will they add more slides. During this time, a safety-conscience leader must mentor the new firefighter. This is especially necessary for inexperienced people in fireline leadership positions.

What can Congress do to help firefighter safety? First, I believe it is important to realize that often these critical decisions are being made by nearly entry-level employees who are in the process of assembling their “slide tray” of experiences. Are we comfortable with these inexperienced leaders making these life and death decisions, under stress, when they are first out there on their own?

Second, we must take every opportunity to send our firefighter trainees to the firelines where they can gain real fire experience under a strong, field-proven supervisor. Here leadership and decision-making skills can be observed and trained firsthand. In this situation we have a mentor who can provide a “back-up slide” for the trainee. There is especially a need for experienced people to fill this mentor role. All too often experienced people get pulled off firelines to management positions; trading chainsaws for coffee cups, and looking at spreadsheet instead of flames. This practice takes away from the field exactly the people who most need to be there to train tomorrow’s fireline leaders. The U.S. military employs this technique successfully. This strategy will increase suppression costs somewhat; however, in light of the alternative this cost is insignificant.

Third, fire management strategies must be identified that are consistent with the values at risk. Much too often a strategy is selected requiring individuals to travel through the night putting them on the fireline during active burning conditions with little to no sleep. Fatigue is one of the greatest obstacles to quality decision-making; my experience and numerous studies support this. Fatigue-reduction strategies may result in more acres burned by fire, however, under severe weather and fuel conditions this may be the best alternative. I believe as land management plans are revised, and fire management plans are developed to support the land management goals, appropriate strategies can be identified to guide management response to wildland fire under various scenarios. The fire management community can use your support in marketing these strategies to the public.

Fourth, everyone here is familiar with the current forest structure after many years of aggressively suppressing fire from much of our landscape. The fuel problem is a reality. I am convinced as we begin to manage the fuels in the critical wildland/urban interface we will see improved firefighter safety. Many of the fires today are backing firefighters into a hard corner when it comes to operations in a heavily-fueled interface. Re-arranging these fuels will take time and is not only a single year’s fix. Fire management needs your support in both marketing this effort to our public and your understanding the fuel situation will take time.

Wildland firefighting is unique in that it is accomplished through manual labor using some of the most basic of tools, e.g., shovels and axes, while at the same time this work occurs in a highly dynamic environment where often there is only limited information at best. Regardless of how the fuels are managed or the appropriate response to a wildland fire, firefighter safety at some moment in the future will still be entirely determined by the leadership and decision-making skills of the individual in-charge. I ask that this need be addressed with the urgency it deserves.

Today, on behalf of all past, present, and future wildland firefighters, I thank Congress for their efforts to improve firefighter safety and I ask for your continued vigilance and support for those firefighters who risk their lives on behalf of their nation. I thank this committee for the opportunity to speak here today on this important issue.

Senator CANTWELL. Thank you, Mr. Gleason, and thank you for being here. I appreciate your years of experience.

Mr. Weaver.

STATEMENT OF KEN WEAVER, YAKIMA, WA

Mr. WEAVER. Thank you. On behalf of the other three survivor families that were unable to attend today and on behalf of my family and my son Devin, I thank you for this opportunity.

My wife Barbara sleeps lighter than I do, so she heard the phone ring at 1:05 in the wee hours of July 11. I woke up 2 minutes later with Barbara screaming in panic and terror. She said, there is a guy on the phone and he says Devin is dead. You have got to talk to him and tell him he is alive.

In that moment of realization, the beginning of a nightmare came, a nightmare that would change the rest of my life. I knew I had lost my best friend, my golf, my hunting partner, my camping partner, my lifetime protector, my last name, my only son.

The next 8 hours were spent in the state of shock. After the initial wave of pain began to pass, all I could think of was how could they do this.

Three members of the U.S. Forest Service came to our house the next afternoon to give us the first details of the tragedy. They described an out-of-control wildfire acting erratically entrapped and burned to death my son. What they could not explain were the empirical facts. This crew was down a dead end road. They had ground tools. Yet the fire was over 100 feet high. The fire was, indeed, out of control but had been for several hours. It was not a surprise. They were in a steep box canyon. They were down a dead end road.

As information became available over the next days and weeks, what emerged is something far different than an act of God. What emerged was a story of managerial misconduct, ignorance of all safety rules and warning signs to a degree that you could only describe as criminal. With 21 days of experience on their first major fire, these kids were led down a dead end road in front of an out-of-control canopy fire. And even after they were trapped, with the fire screaming down both sides of this canyon, they were given no leadership. They were given no help. They were not even given any order to prepare, no defensive actions. They never even heard an order to deploy their shelters.

Do not be confused. This is how these guys died. They were not defending their country. They were not acting heroically. They did not give their lives. They were just doing their job just as they were instructed, as best they were trained, and they had their lives taken.

My son was so proud to be an American, and he was even more proud of the Government he loved. He came home after his first week of training, had a smile on his face that went from ear to ear. He says, Dad, I'm a Fed. He was just delighted. But the gut wrenching tragedy that I feel here is I believe the only reason he lost his life was because he was a Fed, not because of the job he was doing, but because of who he was doing it for.

The U.S. Forest Service does not have to account for its safety violations to anyone. Safety violations, so egregious they would be criminally prosecuted if they occurred in the private sector, do not even warrant a fine. In fact, they are allowed to police themselves with absolutely no oversight from any other agency. Oh, sure,

OSHA writes citations, but they cannot levy fines. I find it very difficult to call that oversight.

This is an agency that has had de facto autonomy. They operate completely unencumbered. They can choose to ignore any or all of their own rules. In fact, they can violate every single safety rule they have and they can ignore every single sign of danger, abandon all common sense, operate with no clear command structure, with no coherent plan of attack while they drive down a dead end road in a steep box canyon in front of an out-of-control wildfire. They can do all this and continue on.

Instead, our children paid the highest price possible, just as others have paid this terrible price before them and, unless we change something in a hurry, just as others yet will pay this price again.

Accountable government is the foundation of our democracy. Accountable government is what makes the free world free. Our Founding Fathers dumped tea in Boston Harbor for accountable government. Our greatest generation fought and died to preserve it. My own father clung to life for over 6 hours in the Pacific Ocean. His ship was sunk by Kamikazes. He fought and nearly died so that his children and his grandchildren could live free with an accountable government.

It seems morally bankrupt to me to stringently enforce worker safety in the private sector but make Federal employees working for the Government risk injury and death because safety rules were unenforceable. How can we ask our best and brightest young people to come protect our forests if we are not willing to protect their lives? How many more brave, dedicated young people will we betray by not ensuring the highest possible level of workplace safety?

Adding to the irony of this disaster is the fact that, as we have heard earlier in the TriData report, the Forest Service has been aware of this problem for over 10 years, at least. It clearly outlined the problem in their report and it clearly outlined the solution. We do not need more safety rules. The safety rules we have are excellent. All we need to do is enforce them. Without enforcement, supervisory personnel on the fireline have little incentive to stick with procedure. Fear of their own safety does little to motivate them in the heat of battling a blaze.

Does anybody in this room put on a safety belt on the way to the store because they fear for their lives? No. We follow the safety rule for fear of enforcement. We do not want the \$45 ticket. Even though it could mean the difference between life and death, the vast majority of us are motivated only by the potential of a fine. These fire managers are no different than you and I. Who among us here today follows any unenforced rule?

They talk about how difficult and complicated the solution is. I scoff at that. Maybe it is my political naivete, but I do not see a complicated solution here. The Occupational Safety and Health Administration is charged with ensuring workplace safety for the Federal employees. In the private sector, they are given enforcement power. In the public sector, they are not. The question that has haunted my days and nights since the first hours of July 11 is, why not?

As my son had said to me during his first week of training, these rules are in red ink because they are written in blood, Dad. Who

would have known that they would have written the next action or inaction plan in his blood?

Why? Why the double standard? Why not give OSHA enforcement power over all Federal employees? Can we possibly ask our people to suffer greater workplace risk just because of politics?

This issue takes on even greater importance when you consider the effect of the aggressive fire suppression efforts the Forest Service has engaged in over the last 50 years. Fuel loads are at unnatural highs. We have continuing periods of drought combining to make the most dangerous wildfire conditions in history. We must not send our children into these fires without the most stringent adherence to safety.

I am haunted by the pain and the sheer defeat that cut through me when I saw my son's name on a death certificate. I am here today to beg you, please, please do not let this happen again. Thank you.

[The prepared statement of Mr. Weaver follows:]

PREPARED STATEMENT OF KEN WEAVER, YAKIMA, WA

Thank you for the opportunity to address the Committee.

My wife Barbara sleeps lighter than I do. So it was her that heard the phone ring at 1:05 in the wee hours of July 11th. I was awakened two minutes later when Barbara, in a voice choked with panic, terror and hysteria came into the bedroom screaming, "Ken, there's a man on the phone. He says Devin is dead. You talk to him, tell him Devin is alive." Thus began the nightmare that would change the rest of my life. In that first instant of realization I knew I had lost my best male friend, my golfing partner, my hunting partner, my camping partner, my lifetime protector, my last name, my only son.

The next eight hours were spent in a state of shock. After the initial wave of pain began to pass all I could think of was, how could they do this. Three members of the USFS came to our home that afternoon to give us the first details of the tragedy. They described an act of God that was no one's fault. What they could not explain were the empirical facts. This crew was down a dead-end road. They had ground tools, yet the fire was over 100 feet high. The fire was indeed out of control, but had been for several hours before the crew trapped themselves in a steep box canyon in front of the flames. As information became available over the next days and weeks, what emerged was something far different than an act of God. What emerged was a story of managerial misconduct, that ignored all safety rules and warning signs, to a degree that can only be described as criminal. With twenty-one days of experience on their first major fire, these kids were led down a dead-end road in front of an out-of-control canopy fire. And even after they were trapped, with fire screaming at them advancing down both sides of the canyon, they were given the fatal advice that would cost them their lives twenty minutes later. "Just hang out here, people. This thing will burn around us and we will be safe." You break every rule, you ignore every warning sign, and then incredibly don't even take one single defensive action to protect your crew.

Don't be misled: This is how these young people died. They weren't defending their country, they weren't acting heroically, and they didn't give their lives. They were just doing their job as they were instructed when they had their lives taken. They died utterly and completely betrayed.

My son was so proud to be an American and he was even more proud to work for the government he loved. He came home after his week of training with a smile as large as his face just bursting with pride and said, "Dad, I'm a Fed." The gut wrenching irony here is that he lost his life not because of what he was doing, but who he was doing it for.

The USFS does not have to account for its safety violations to anyone. Safety violations so egregious that they would be criminally prosecuted if they occurred in the private sector don't even warrant a fine when committed by the USFS. In fact, they are allowed to police themselves with absolutely no oversight from any other agency. Sure, OSHA will write citations, but they can't levy fines. It's difficult to call that oversight. This is an agency that has de facto autonomy; they operate completely unencumbered by any safety regulations. They can choose to follow their own rules, or they can choose to ignore any or all of them. In fact, they can violate every single

safety rule they have, ignore every single sign of danger, abandon all common sense, operate with no clear command structure and no coherent plan of attack—while they drive down a dead-end road in a steep box canyon in front of an out-of-control wildfire. They can do all of this and pay no price. Instead, our children paid the highest price possible, just as others have paid this terrible price before them, and absent change, just as others yet will pay it again.

Accountable government is the foundation of our great democracy. Accountable government is what makes the “free world” free. Our founding fathers dumped tea in Boston Harbor for accountable government. Our greatest generation fought and died to preserve it. My father clung to life for over six hours floating in the Pacific Ocean bleeding from a large shrapnel wound in his back after his ship was sunk by a kamikaze. He fought and nearly died so that his children and grandchildren could live free with a free and accountable government.

It seems morally bankrupt to me to stringently enforce worker safety in the private sector, but make federal employees working for the government risk injury and death because safety rules are unenforceable. How can we ask our best and brightest young people to come protect our forests if we’re not willing to protect their lives? How many more brave, dedicated young people will we betray by not insuring the highest possible level of workplace safety?

Adding to the irony of this disaster is the fact that we have been aware of this problem for at least a decade and we already know the solution. The TriData report published in 1998 clearly outlined the problem, and the solution. We don’t need new safety rules; the rules we have now are excellent. All we need to do is enforce them. Without enforcement, supervisory personnel on the fire-line have little incentive to stick with procedure. Fear for their own safety does little to motivate them, in the heat of battling a blaze. Does anyone in this room put on a seat belt on the way to the store for fear of their lives? No, we follow this safety rule for fear of enforcement. Even though it could mean the difference between life and death, the vast majority of us are motivated only by the potential of a fine. These fire managers are no different than you and I. Who among us here today adheres to any unenforced rule?

The Occupational Safety and Health Administration is charged with insuring workplace safety for federal employees. In the private sector they are given enforcement power, in the public sector they are not. The question that has haunted my days and nights since the first hours of July 11th is, why not? As my son said to me during his week of training, “these rules are written in blood, Dad.” Who would have known that the next chapter would be written with his squad’s blood? Why? Why the double standard? Why not give OSHA enforcement powers over all federal employees? Can we possibly ask people to suffer greater workplace risk just because of politics?

This issue takes on even greater importance when you consider the effect of aggressive fire suppression efforts of the USFS over the last fifty years. Fuel loads are now at an unnatural high, and with consistent periods of drought, combine to make the most dangerous wildfire conditions in history. We must not send our children into these fires without the most stringent adherence to safety.

I am haunted by the pain and the sheer defeat that cut through my heart when I saw my son’s name on a Certificate of Death. Please, please . . . please don’t ever let this happen again.

Senator CANTWELL. Thank you, Mr. Weaver, for your testimony and your willingness to come here and share this very painful moment. I want to again express my condolences to you and your family, and I want to express condolences on behalf of Senator Murray who wanted to be here today as well, and on behalf of other members of our State’s delegation.

Mr. WEAVER. Thank you.

Senator CANTWELL. You have done us proud by being here and paying attention to this issue at a point in time when I am sure that you wish that these circumstances were very, very different.

I have to ask you, Mr. Weaver, your son—do you know how much time he had being trained when he first was hired?

Mr. WEAVER. He just had the 1 week of training. They had taught him fundamentally how to use a shelter. But more than anything else, they taught him that the safety rules that the Forest

Service has are never bent, never broken. They never ever told him that they, in fact, would break every single one of them and abandon all common sense. He was totally unprepared, totally untrained for that.

Senator CANTWELL. So, you think that Devin understood what the rules were, but when out on the fire scene, did not see them being exercised?

Mr. WEAVER. No. Devin thought that they were adhered to stringently. They told him these rules were never bent, let alone broken. He was very proud of the rules. He showed me a big, long sheet of rules that you had to follow just to start a chainsaw, something that he was very adept at using. And he said, my gosh, Dad, these guys are so safe. He scoffed at his mother's apprehension and his mother's fear. I never stated mine. His mother did. Devin scoffed and he said, Dad, these guys are so safe. There is no chance I could ever get hurt.

Senator CANTWELL. So, the fact that he had this 1 week of training and was able to produce these rules gave you and your family some sense of comfort that there really was a culture within the Forest Service that adhered to safety.

Mr. WEAVER. Oh, absolutely. I did not lose an ounce of sleep. Devin was an incredibly in-shape athlete. I figured, if the worst case scenario happened, with the physical training that he had put himself through running 7 miles a day with a 30-pound pack on his back, if anyone could survive anything, Devin would. With the stated commitment to safety that the Forest Service had given him, and through him to us, I felt that there was absolutely no reason to be concerned at any level for his safety.

Senator CANTWELL. And when was his first fire?

Mr. WEAVER. His first fire, I think, was right after his training. It was just a little brush fire that they had out by the woodshed on Highway 410. There was only a dozen or so trees that burned. It primarily burned across a rocky slope.

Senator CANTWELL. When was this after his training? Shortly?

Mr. WEAVER. This was, yes, like a day or 2 after his training. They had him out stacking sticks, as they called it, until this fire started, and so he was delighted to get on a fire.

He was chagrined to be put on this mop-up fire at Thirtymile because the big fire was at South Libby. And like all of these guys—I mean, these young people—I mean, there is this culture of machismo. They want to be out there on the big fire. It does not matter they are not trained. They are all relying on their supervisors for that. And when they sent him down this road, he had no clue it was a dead end road.

Senator CANTWELL. So, the Thirtymile Fire was what fire for him, as far as being actually out—

Mr. WEAVER. It was his first major fire, his second actual fire.

Senator CANTWELL. So, 1 week of training, coming home convincing his mom with his rule book, one brush fire, and then the Thirtymile Fire.

Mr. WEAVER. Correct.

Senator CANTWELL. That is the extent of his training as you knew it.

Mr. WEAVER. That was it. Period.

I think his training would have only been complete if it would have included a disclaimer about the fact that we do not need to follow rules when it is not convenient. Had he had that suspicion, he would probably not have thought with the group mind and he would not have underestimated the risk of this fire bearing down on him.

Senator CANTWELL. Thank you.

Mr. Gleason, you mentioned this change in the system—the LCES system—and possibly moving toward that instead of the 10 and 18 rules currently in place. My question is, would the conditions at Thirtymile Fire have been obvious to most people? We were in the middle of the second worst drought on record in the State, given the elevation of the site, the fact that it was limited access, and the weather conditions, would not all of those have been early indicators of great concern?

Mr. GLEASON. Yes, they would have been. But I would not have expected first-year crew members to be alert to those kind of signals because in those 32 hours, they are hit with a lot of information. I liken it to when I was drafted and tried to remember the 10 orders that the Army teaches you. You have 10 firefighting orders. You do not have any context to put that in. It is just a list of terms and concepts. I think to somebody who would be leading resources out there, that the fire behavior indicators were there with the drought and with the conditions the way they were.

Senator CANTWELL. So, who should have been paying attention to those conditions?

Mr. GLEASON. A crew supervisor on up the chain of command to the district, the forest level should have been aware of those conditions.

Senator CANTWELL. In your experience, do crew members also usually have information about the forest floor and recent burns? I think in this case there had not been a fire there in 200 years. So, we had a lot of fuel, very, very dry conditions, and a high elevation, which made it hard to get to.

Mr. GLEASON. They were probably exposed to that for at least 8 hours during that 32-hour training, 8 hours of fire behavior. But again, fire behavior is complex. A wildland fire is complex, and you not only need to pay attention to the fuels, but the topography and the weather. I reflect back in 1964 when I first went to fire school, and this is after living in southern California and watching the mountains burn. Still the amount of information that you are hit with there, I do not think it is right to hold a first-year crew member accountable.

Senator CANTWELL. And just to be clear, I am not suggesting that. I guess what I am trying to suggest is that we may now know the details of the situation, and maybe the supervisor or the management team did not know at the time. But if you knew that this had been one of the worst droughts on record in the State, that there were some very dry conditions, and if you knew that that particular forest area had not had a fire in 200 years, so there was lots of fuel on the ground, and you knew that it was a steep area, would you—on a Richter scale of 1 to 10—already say this is a dangerous climate? Now, the fire itself may be relatively contained at that point in time, but you would think that the conditions that ex-

isted would be something that would worry most experienced firefighters.

Mr. GLEASON. Yes, and to go up that canyon to get up slope from that fire while the fire was in the bottom of the canyon, that would be a heads-up also. You would want to stay at the bottom end of that just because you knew from experience that the winds would start blowing up canyon and accelerate the fire spread. So, to go to the front of a fire is definitely a watch-out situation.

Senator CANTWELL. So, you are saying, though, that the LCES standards focus more on those escape routes in an up-front way.

Mr. GLEASON. Right. I am always leery of simplification, and that is what LCES does is simplifies. To restate myself, the wildland fire environment is super complex. I am not advocating that LCES in itself would have prevented those accidents.

But I get a little bit concerned, and after reading *Managing the Unexpected* by Karl Weick here, I get a little bit concerned that we are too focused on the orders and the rules and we are not going through a formalized risk management procedure, risk assessment procedure like the military. And I am wondering if those people would have got on site and said, okay, everybody take 5 minutes, just take a timeout, step back and to take a look at the big picture, think about how dry the fuels are, where they are in the canyon, that the outcome would have been different.

This is why I personally think that it is bigger than just the Forest Service. It is all wildland fire management agencies that are fighting fire. They have to come up with a set of common values such as it is okay to speak out if you are concerned about being in an area. It is okay to defer to somebody who has more expertise. It is okay not to engage. If those values were set—right now, they are not and there is not a wildland fire community because you go to one part of the country, one agency, maybe a local agency or a State agency, is fighting fire entirely different than another part of the country.

So, it is bigger than the Forest Service, and it relies on a common understanding of what the values are and then to base a risk management approach off of those values and not to come up with LCES or fire orders or 18 situations or downhill fireline construction guidelines, such as occurred in 1966 after 12 firefighters lost their lives behind Los Angeles. That is what concerns me is that we are putting band aids on top of something that is a lot deeper issue.

Senator CANTWELL. And so, what do you think training programs should look like for firefighters?

Mr. GLEASON. Continual, number one.

Senator CANTWELL. Do you mean continual as opposed to just on-the-job exposure?

Mr. GLEASON. Right, right.

And the best way to learn how to make a decision is to be with somebody who is experienced in making decisions, watch what cues they are picking up from the environment, and how they are processing this information before they decide to engage or disengage, and not to go to a course or simply to follow one task, but to really follow the footsteps of an experienced decision maker in a heavy duty fire fight.

Senator CANTWELL. Mr. Schaenman, you were a very responsible, key person in the TriData study. Do you think the recommendations were implemented?

Mr. GLEASON. I know that a lot of them have been implemented and not all have been implemented. We made over 200 recommendations and it was an awful lot to do in one shot. It takes years to implement some of these things. I think we can go much further than we have. I know that there have been changes in the training.

But a lot of things take more resources than have been put into this. We spend a lot more resources preparing the military, preparing airline pilots for safety than we do firefighters, both urban and wildland firefighters. We are willing to spend a lot more money on equipment for a military personnel than a firefighter personnel. We spend a lot more money to get situational awareness. There are virtual reality simulators, for example, that are commonly used in the military now that are hardly used—I do not know if they are used at all in wildland firefighting. They are starting to be used in urban. There are lots of simulations you can run people through to improve their decision making experience.

On the mentoring issue that was mentioned, Gary Klein, who was a member of our team and was mentioned by Paul Gleason, has done a lot of research in how do you teach people to mentor. And you can teach people to mentor and bring up the experience very quickly. The Marines are doing this at the squad level. There are drones that can be used to monitor where fires are and help situation awareness. There are better communication systems. There are lots of things that can be done.

But the experience is one of the biggest. You can learn all the rules in the world, and if you do not have the experience level, making that real-time decision at the crew, at the division, and higher up the line, it does not happen as well as when you do have it. We have to stop the experienced decision makers from leaving the wildland firefighting. We are not giving them enough incentives to stay. They have a lot of disincentives to stay actually.

Senator CANTWELL. I want to come back to that question.

Mr. SCHAEENMAN. So, we have to save the experienced people and we have to do better training of the people who do not have the experience to make up for the lack of experience. There are a lot of things that can be done. There are not resources to do everything all at once at the same time.

Senator CANTWELL. Not to put the Forest Service on the spot when they are not up here—although Mr. Williams is still at the table—but I did not hear lack of resources in any of the testimony from the Forest Service. I heard other issues, about policies that are in place that we have to make sure get implemented, but I did not hear any suggestion that the Forest Service lacks resources.

Now, my sense is that there is some level of agreement on that there has to be more training, but from what Mr. Gleason is describing and what was described earlier, it sounds like two different problems. In particular, you mention the culture of—I think you called it—control communication response or something similar to that.

Mr. SCHAENMAN. Closing the dialogue, closing the communication loop.

Senator CANTWELL. Yes. Closing the communication loop seems to be a key issue in this particular investigation, with several people saying that a command was given and several other people saying they never heard the command.

Mr. SCHAENMAN. That is not a money issue. That one is simply changing behavior, changing a culture, and say I give you an instruction, it is my responsibility to make sure you understood the instruction. It is your responsibility, if you did not understand it, to ask the question.

Senator CANTWELL. Was that a recommendation in the—

Mr. SCHAENMAN. Yes. That was one of our key recommendations.

Senator CANTWELL. So, do you have any knowledge that the Forest Service has implemented it?

Mr. SCHAENMAN. I think some of that is being practiced in some of the training, but I do not know for sure the extent of that.

Senator CANTWELL. Mr. Williams, did you want to comment?

Mr. WILLIAMS. One of the 10 standard orders is to give clear instructions and to make sure they are understood.

My heart is awful heavy listening to Mr. Weaver and him relating this experience his family has gone through. I cannot help but think of my own son and my family.

This is a high risk/high consequence business. Rules have got to govern our activities. Whether it is 10 standard orders or 4 simple LCES, something has got to govern these activities. I would go back to an earlier comment when we have got to look at are the policies adequate, are the procedures in place, or is this a performance issue, and I keep coming back to the fact that in my mind, we have got a performance issue here and that quickly falls to the accountability business.

There has been much discussion about the culture in wildland firefighting. It is a can-do outfit. In this environment, it has got to be. But in the absence of good crew leadership, in the absence of supervisory controls, in the absence of adequate management oversight, there are very thin margins that separate can-do from make-do and make-do from tragedy. The role of management and supervision and crew leadership is to do the job right. There are places all over this country where that is being routinely done. That did not happen here.

Senator CANTWELL. Well, given that, Mr. Williams, I would think that the normal conclusion then would have been to take disciplinary action against those individuals or suspend them and not have them working on future fires.

Mr. WILLIAMS. I think you heard a little earlier that an administrative review is underway. We have brought in an outside—

Senator CANTWELL. But these individuals are continuing to work, are they not?

Mr. WILLIAMS. They are not working on firelines.

Senator CANTWELL. Have any of them received promotions?

Mr. WILLIAMS. Not that I am aware of, but I do not know that.

I would tell you, though, that in the past we have disbanded type I teams. We have pulled red cards. The agency is not averse to taking action when it is warranted.

Senator CANTWELL. That would be something that would be helpful to provide to the committee—a list of disciplinary action that had been taken against personnel in past incidents.

Mr. WILLIAMS. Within the confines of the Privacy Act, we will do everything we can, of course.

Senator CANTWELL. Numbers are fine; not names, but numbers in particular incidents.

Which brings me back to Mr. Schaenman. You mentioned that one important thing to do in reviewing safety standards, once they are implemented, is to have something like a data system to see how you are performing. It does not seem like we have that information. At least I did not get that from the Forest Service earlier. How hard is that to put together, given that you could have oversight of how a crew is working and see whether command closure loops were being implemented, see whether the various processes were actually being done?

Mr. SCHAEENMAN. The most basic thing is getting better data on the actual injuries that do occur and also on near misses. The Forest Service is in the process of upgrading its injury reporting system, which I just learned at a conference a week ago, and is very close to having a much better system than it ever had before. It has tested it in one region and they are considering expanding it nationally as a basis. I think there has been a lot of progress made in that area, which is what I have been concerned about. I headed the National Fire Data Center. I am sort of a data person, and I think there is hope for much better data on that.

The rest of the performance measurement, though, is very complicated to measure everybody all the time on everything. You do have to look at the near misses, the violations that do not lead to a fatality or an injury, but could have. And that is something that has happened in air safety where pilots are responsible for reporting near misses and do, and things are headed off before they hurt people that way.

There has been a lot of discussion of, well, how do you get people to report near misses. It is a burdensome thing, and the firefighters are sort of a special breed. They do not like paperwork. They do not like reporting things like that.

But you have to change the culture of lots little things. It takes years to change a culture. It requires lots and lots of little actions. Management, middle management, people at the bottom all have to agree on the change.

Senator CANTWELL. And how does Congress then make sure that the Forest Service makes that cultural change and implements those things?

Mr. SCHAEENMAN. I think you are heading in the right direction asking for a report card every so often about what has been changed and also what is stopping the change.

Senator CANTWELL. I would say, with Mr. Weaver here, I do not think we are moving fast enough, and that is the issue. We are not moving fast enough to make that happen. As Senator Wyden said, we do not want to back here in a year at another hearing with similar incidents driving us to pay attention to something that, if it is a long process or a resource issue, we should address.

I want to ask one last question, but I wanted to also give you a chance to address this human resource issue regarding the management team. I am not sure if you are being direct about the Forest Service's management practices as they relate to firefighter age or length of service, but you are clearly stating that experience is important and that somehow we do not have the infrastructure to keep those senior individuals. Is that right?

Mr. SCHAENMAN. Yes, and it is not just a Forest Service issue. It is across all five wildland agencies. We have been talking here mostly Forest Service, but we found the problem across all five agencies that have wildland firefighters. And State level agencies have told me it is very similar in their situation also. So, yes, that is a big problem of retaining the experienced leaders in the fire world. They do not have the incentive.

Senator CANTWELL. So, what do we do about that?

Mr. SCHAENMAN. Well, we address a lot of things. One is to have a strategic personnel plan basically to track how many people you have with what level experience at different levels and to try to make sure that you have got people in the pipeline getting the experience to move up to the next level.

You also have to have the incentives to keep the people with the experience there on the job. There is actually some salary disincentives for people to give up their normal office job and be part of the fire militia and only work part-time of the year. So, there is a big personnel motivation issue that needs to be solved. Then we had some specific recommendations in our report on what needs to be done.

Senator CANTWELL. Well, this panel has been very informative, and I want to wrap it up and give you a chance, if any of you want to make final comments on this. But I guess I am left with very good data, Mr. Schaenman, from you and Mr. Gleason about the realities of what could be great firefighting management training efforts and safety procedures. Yet, I cannot guarantee to Mr. Weaver that that is going to be implemented. So, if you could in final comments tell me your thoughts on how we bring about accountability—either by giving OSHA broader authority or bringing in an outside inspector. How we can make sure that that accountability is really there from a congressional oversight perspective.121Mr. Schaenman, Mr. Gleason, Mr. Weaver. If anybody on the panel wants to make final comments.

Mr. SCHAENMAN. I do not think there is enough resources going into the safety area or the training area. I think that you can make more rapid change by asking people what is stopping the change, whether it is personnel rules. I mean, there are all kinds of privacy rules, there are all kinds of personnel rules that stop you from just doing preemptive things of taking somebody off the line as you can in sports. I use a sports analogy. You can sit somebody down for a game. You can sit somebody down for a season, and you do not have all kinds of labor rules to deal with. It is not that easy to do with a Federal employee. There are all kinds of constraints on that. So, you have got to see what is stopping you from having the immediate accountability. It is not orneriness. It is people trying to find the best way to do this. But I think you all can ask the ques-

tion, is there a law stopping this? Is it will? Is it money? What is stopping us from moving faster?

Senator CANTWELL. Mr. Gleason.

Mr. GLEASON. Yes. I am still convinced that with the finest training, that we still need to have some sort of mentoring process in place where people are making decisions alongside of somebody else who is experienced in making that decision, all the way from the crew boss, incident commander, to the fire management officer, and on up the line. That is needed. How it fits together, how it comes together I do not know because that is basically doubling the workforce. I really feel that no matter what quality of training there is that it is entirely different when you are in the real environment that you actually engage with those procedures and processes.

Senator CANTWELL. Mr. Weaver, any final comments?

Mr. WEAVER. Yes. I claim still my political naivete. This problem is always painted in various shades of gray, and I understand, yes, that we need training and I could not agree more. We need to figure out how to keep qualified people in the job.

But it does not matter how good your training is and it does not matter how qualified your people are, if you do not adhere to the safety rules, if you do not have an action/consequence equation, you are going to have deaths if you do not have people following instructions. I do not care how intelligent they are. I do not care how well trained they are. I do not care how well funded you are. If you do not have the guy on the fireline that is sending the crew behind that fire to stop, take a time out, 5 minutes and think am I following the rules, you are going to have deaths. At the end of the day, in my mind—and I am sure I am guilty of simplifying this and I worry about oversimplification. But at the end of the day, without accountability, nothing that we are going to try to do here, in terms of training, in terms of better personnel, will ever have any impact.

Senator CANTWELL. Well, thank you, Mr. Weaver, and I thank the panelists for being here. As with the other panelists, if there are questions from members, we would request that you please respond to those. They will likely be in writing. We appreciate your help on that.

This is a very important issue not just for those Western States that have wildland fires but for the entire country. We need to do a better job of ensuring that those who are employed to fight fires are employed in a safe environment. That is something I think this committee is going to spend a significant amount of time on.

So, again, I thank everyone who testified today.

This Subcommittee on Public Lands and Forests is adjourned.

[Whereupon, at 4:47 p.m., the hearing was adjourned.]

[Subsequent to the hearing, the following was received for the record:]

Yakima, WA, October 18, 2001.

LADIES AND GENTLEMEN:

I feel compelled to write you this letter regarding the death of my daughter Jessica L. Johnson—a death that was preventable, a death that has blackened my world. Jessica was my sunshine and I loved her with all of my heart. I pray that my daughters' young life was not taken in vain. The only things that I am left with are the memories of Jessica's short life and a pain and sadness that is indescribable

unless you yourselves have experienced such a tragedy. Jessica was such a caring and giving person; so willing to give of herself to others she was very sensitive and never wanted to hurt anyone. As a young child she became friends with a little girl in first grade, a friend that was different from most children their age.

Her friend suffered from Cerebral Palsy, physically she was different from all of the other children and most children made fun of her at school. Jessica would protect her and help her when others would turn away. Jessica was a friend that she would have for life and when she came to my home after Jessica's death she was so devastated that she could hardly speak. Her sweet friend was no more. As Jessica grew up over the years she became very outgoing and charismatic. Everyone liked her and our phone would ring off of the hook from the time she came home from school until bedtime.

She grew into a young woman and was attending Central Washington University in Ellensburg, Washington. Jessica chose Central so she would be close to home. She never wanted to be an only child, so after 15 years of waiting and wanting, a little sister or brother God blessed our family with Ashley Jessica's little sister that is now 5-year-olds. Jessica would often arrive at home mid-week from college just to be with her little sister because she missed her and wanted to be near her family and friends. I will never forget as long as I'm alive Jessie driving away in her silver Nissan pickup with little Ashley standing on the curb yelling at the top of her little lungs, so to be heard over the roar of the truck for Jessica to be careful and to come home soon! She did this every time Jessie came home, no matter what the weather.

Sometimes Jessie would come home during the week to help the local fire department teach a fire safety class to the children attending grade school. She always had a smile on her face and always had something positive to say to others. She would often surprise us with random acts of kindness in her special little way. Jessica was so full of life and had made many plans to spend time with her family in the days and years to come. She and I were walking one evening in June before she started working for the Forest Service. We were talking about her soon approaching 20th birthday. We talked about taking a trip on her 21st birthday to a Spa. I told her that I would pay for the trip but that she had to do the research and pick the place she would be on her 21st birthday. That dream will never come true for her just, as she never got to have her 20th birthday. She was killed just 15 days before she turned 20 years old. Our family had to celebrate her birthday without her.

During this same evening walk Jessica told me that she was reading a book called "Fire on the Mountain". She told me that is was a story about 14 fire fighters that were killed in 1994. She and I then had a chance to talk about being entrapped by a wildfire and Jessica assured me that the Forest Service would never let that happened, that she was trained in fire shelter deployment and that she could deploy her shelter in 20-30 seconds and that I didn't need to worry because, "Safety First Mom, Safety First!" I was so afraid for her and she was not afraid because she trusted and believed in what she had been taught over the years in the wildland fire training classes she attended.

She also trusted and believed in the Forest Service and the propaganda that they taught her. They even have water bottles with Safety First printed on the sides! Ashley misses her sister so much and it is hard for me to answer the difficult questions she asks me—like when is Jessie coming home? Then she says in the same breath, Jessie is never coming home, she's in heaven and she will never pick me up after school like she promised me, will she mom, because Jessie is dead. She will yell out to God just all of the sudden, "God you give me back my sister, give me back Jessica!" How do you comfort a child that has lost her world, someone she adored, and someone that she thought was the greatest? Maybe the Forest Service would like to explain these things to my little Ashley. Maybe they would like to tell her someday what really happened to her sister, and maybe they would like to explain the horrific way Jessica died. Running for her life up a rocky slope that is very difficult to even walk on, being licked by flames, being burnt, screaming, suffering and crying in pain, praying to God in an aluminum shelter, praying for her life all of the while being burnt, aware of everything that was happening until her last breath was taken.

Maybe they would like to explain to Ashley why her Mommy cries every day and can hardly concentrate on the simplest of tasks on some days. Maybe they would like to feel the pain and sadness that I am left with. Maybe they would like to have their futures taken away from them. I will never see my daughter, the only child from my first marriage, graduate from college and become a Registered Dietician like she dreamed and work so hard to accomplish. I will never see her get married, I will never be a grandmother to her children, I will never get to celebrate another birthday with her. She will not be with our family during the holidays. She is for-

ever gone. I have lost my connection to the future, someone that I cared very deeply about, loved with all of my heart and raised to be a good person, a child that for a period in my life I raised as a single parent, a good and loving person that would not harm anyone. Her family and friends miss her and some days it is just hard to go on. We often think about her, we often wonder why?

Why can the U.S. Forest Service kill their employees, our countries people, and there is no recourse no matter what happened. Our great country has a justice system that persecutes people in our country for their wrong doings. Why is there employer immunity? This basically gives the Federal Government the right to do whatever they want to the tax paying citizens; their employees and they know darn well that they are untouchable. But we the people don't know these facts unless we are faced with them, just as all four of the victims' families now know. The Forest Service has slapped us in the face for the last time; the citizens of this Nation will demand that they face justice and that they are held accountable for their actions, just as we demand that the Terrorist are held accountable for their deadly deeds to our people. This is no different. They can tell us every lie in the book and even control our funerals not allowing us to view our own children's bodies. . . . only because my beautiful daughter who once weighed 150 pounds came home in a casket, in a body bag only weighing 20 pounds, her remains were basically her chest cavity, the rest of her was burned to ashes and those ashes remain on the rock scree in the Chewuch River Canyon.

It is my hope that there will be changes made within the U.S. Forest Service, changes that will provide improvement in the future for wildland Fire Fighters. Although this tragedy is new to my family and me, this is not the first time that wildland Fire Fighters have heroically given their lives. There have been over 400 deaths in wildland fires from the Mann Gulch Fire, the South Canyon Fire and the latest tragedy, the Thirtymile Fire. The number of the victims may not be as large as those who heroically gave their lives in a rescue effort at the World Trade Center on September 11, 2001, but the significance is just as monumental.

Much like the story that is told of the 14 who died in Colorado State in 1994, our daughter and the 3 others that also died were blamed for their own deaths. The Forest Service then later retracted the statements, stating that the four who died may not have heard the order to come down off of the rocks. The truth is known that the statement was never made for them to come down off of the rocks. I personally have talked with some of the Fire Fighters that survived the Thirtymile Fire and their statements to me were that those orders never came to those who lost their lives.

Although I do give the Forest Service some credit for changing the report and bringing it somewhat closer to the truth, once again they made a baby step toward the truth without every acknowledging exactly what happened and during this whole thing the families are being tortured. Unlike the Storm King Fire, there are survivors of this fire. There is a reason for this, the reason being that the U.S. Forest Service needs to be held accountable for their actions, or lack of actions. There are witnesses to what happened and the truth will be known and it will be made right. Fire Fighters unselfishly give their lives everyday, just as these four did on July 10, 2001.

My daughter had been involved in fire fighting since the end of her junior year in high school. For three and a half years she was a volunteer Fire Fighter for West Valley Fire Department here in Yakima County. She gave her time and energy as a teenager to help those in the community who were in need. She would come home on weekends from college to take call for the local fire department; there are few teenagers that care that much about others, who are willing to sacrifice their time on the weekends to help others. My daughter was a jewel that can never be replaced, as were all of the other victims. This was the second season of fighting wildland fire for my daughter. She worked last year for the Department of Natural Resources on a 20-person crew.

She loved working with others and made many special friends as the crew traveled to different areas to fight fire. She decided this past winter to apply with the Forest Service. She told me that she felt this was a better agency. The Forest Services in my daughters' eyes were the cream of the crop and that's where she wanted to be, with the best! She did not know, nor did we, that there are many flaws within the U.S. Forest Service. Flaws that endanger peoples lives constantly while they are working for them, flaws that actually kill innocent people, people at the prime of their young lives, educated people who are trying to be productive in society. It is time for the U.S. Forest Service to be held accountable. It is time to write a new chapter in wildland fire fighting, not a chapter of sadness and tragedy, but one filled with guidelines that are useful that can be followed by all when fighting a wildland fire.

How many times does history need to repeat itself. How many second chances does one agency need to get it right? Those are the questions that I have along with the huge question of why they have immunity and why they are not held accountable for their actions. Why are they allowed to repeatedly kill their employee's without facing the justice system? Why can they do their own biased investigation and have that reported to the public as fact, when it is full of holes and lies. Why are they allowed to alter the statements of the witness and persecute those who speak out against them, when all that is being said is the truth?

Why were witnesses not allowed to tell reporters that the four that died were screaming in pain as they were being burnt to death, because the Forest Service had not told the families of the victims how they actually died. How can they have such control? Is this not America and don't we have freedom of speech? Is that not still written in the First Amendment? Why do they employ incompetent people and not supervise or assure their competence, yet put them in charge of human lives, in a situation that was clearly a mistake from the very beginning. Why are they allowed to break their own rules, rules they make, rules they train their employees to follow? Why do they promote people and fast track others into positions that they are not qualified to do? Why did they let the Incident Commander and the Incident Commander trainee continue to work and be in charge of supervising other Fire Fighters after four people died at their hands?

Why weren't these people put on administrative leave until the investigation was complete. Or better yet, why aren't they fired? The Lake Leavenworth Fire Fighters nearly revolted and walked out on the Forest Service for these actions. Why are they allowed to blame others and lie? I believe that history has repeated itself, and enough is enough and the time has come for those who are responsible to be held accountable.

It is with this that my family is hoping changes will be made and that the U.S. Forest Service will be held accountable. I am asking all of you to make this right. I believe in the U.S. Government and I need to have a restored faith in the U.S. Forest Service. We need to hold them accountable for their actions and lack of intelligence. They have made and broken promises to us and to the South Canyon Fire Victims Families. They should be held to those promises and our tax dollars must be used to make the necessary changes. The Forest Service must be put under the microscope. They must be monitored diligently to assure that they comply with the changes and they are held accountable if they do not! There should never be a broken promise by the U.S. Government to its people. Let this be the starting point for a new responsibility. The U.S. Forest Service is accountable for their actions. Don't leave a legacy of broken promises and repeated history. Make this right for the people of our Nation and RESTORE ALL OF OUR FAITH!

This task is huge, there is a culture among the "good old boys" that needs to be changed. It is not allowable to cover-up the truth. We the people demand the truth—after all, it is our tax dollars that pay all of your wages. Wildland fires can be fought safely, but Fire Fighters must be given all of the information, tools and resources (not Pulaski's that break and fall apart, not hoses that burst when there being used). Fire Fighters must demand that they be told everything about the area they are fighting a fire in, all of the cards need to be face up on the table, they need to know the weather, the fuels the geographical location of the area they are working in etc., they must all have maps, hand held computers, radios, etc., whatever it takes to fight the fire safely. Then if there is any question on whether the individual is willing to risk his or her own life knowing all of the facts, then that is a choice that they make. Unfortunately, the Fire Fighters on the Thirtymile Fire did not have all of the facts about the weather, fuels, the dead end road, yet they were sent to assist engines that made a decision to go up a dead-end road without permission.

The only escape route was the road and I believe that the Incident Commander and trainee never briefed the Fire Fighters on the change in strategy and the change in escape routes. After all, isn't it mandatory for them to have two escape routes? When those engines got into trouble and needed help whom did they call, the Fire Fighters? The Fire Fighters were sent to assist those engines after the Incident Commanders had given up the fire. The Incident Commanders knew the Fire Fighters would be in front of the fire and the beast had long won the battle. Yet, they sent 14 people up there!

The Fire Fighters are the ones that got trapped and died, somehow miraculously the people on the engines escaped with their lives, as did the Incident Commander trainee who dropped off the 14 Fire Fighters and left an Incident Commander with a vehicle that would only carry 11 people, when it took the Incident Commander trainee two separate loads to drop the Fire Fighters off. These are the cold hard facts. Please help us bring the U.S. Forest Service to justice. After all, the Fire

Fighter was doing exactly what he or she had been taught—FIGHT FIRE AGGRESSIVELY! How crazy is that?

They are taught to have a can-do attitude then they are punished, persecuted and even blamed for their own deaths for doing so! Unfortunately, sometimes that punishment is death! The number one Standard Fire Order is: Fight Fire Aggressively but provide for safety first. Is this not an oxymoron?

Nothing that is done will ever bring back the lives that have been lost over the years, but it may prevent the Forest Service from having their calloused attitude, acting as though they are God, when one of their own dies. Structural Fire Fighters don't have this cold calloused attitude; they can and are held accountable for their own. When one of them dies in the line of duty they lose their brother or sister, members of their own family and they make it right or as close to right as one can get when someone dies.

Please make this right for the Fire Fighters.

Respectfully,

JODY GRAY.

APPENDIX

RESPONSES TO ADDITIONAL QUESTIONS

RESPONSES OF DALE BOSWORTH, CHIEF, FOREST SERVICE, TO QUESTIONS FROM
SENATOR WYDEN

Question 1. As we have discussed, I am concerned that the recommendations contained in the Forest Service's Accident Prevention Plan are strikingly similar to those made at the conclusion of the Tri-Data study, which was done after 14 federal firefighters lost their lives in Colorado's 1994 Storm King fire. In addition, the Occupational Safety and Health Administration performed its own investigation of Storm King, and issued additional recommendations. You have said that the Forest Service takes these recommendations very seriously, but indicated that you are unsure of how many of these measures have been implemented since Storm King. Please provide the Committee with a comprehensive status report on the implementation of these enhanced safety measures and programs. For those that have not yet been implemented, please provide an explanation as to why and a timeline for their completion. Please also submit a list of the measures the Forest Service intends to have in place by the beginning of the 2002 fire season.

Answer. On an annual basis, the Forest Service fights about 10,000 wildfires with about 7,000 firefighters. The agency also assists other wildland fire agencies in suppression actions under their jurisdictions. Annually, these fires burn over 800,000 acres of National Forest. Over 90 percent of all wildfires are suppressed upon the initial action. Additionally, firefighters carry out activities over 1.3 million acres for hazardous fuels reduction each year. This work is accomplished with few accidents or injuries.

There were 183 action items in the Interagency Management Review Team (IMRT) report from the South Canyon tragedy. One hundred seventy four have been completed. The management of transition fires was an issue at both South Canyon and Thirtymile. To provide additional guidance on the management of transition fires, we are developing a transition fire guidebook for all Incident Commanders that will be available before the 2002 fire season.

The Management Review Board for the Thirtymile fire identified 31 action items. Some of these are similar to the South Canyon action items. The 31 items in the Thirtymile Mile Accident Prevention plan have been assigned to an individual or group for implementation. It is our objective to institute as many of these items as possible into our regular operational procedures prior to the 2002 fire season.

Although policy and procedural issues surfaced during the course of the investigation, many of the fundamental issues centered on performance. Specifically, adherence to established safe practices procedures. We are working on strengthening performance expectations at management, supervisory and crew leadership levels of the organization.

Question 2. As part of the National Fire Plan, Congress passed Appropriations of \$1.1 billion in 2001, and the President's budget called for \$1.3 billion for Fiscal Year 2002. It is not clear, however, that any of the additional funds have been spent on enhanced training or safety. Please provide the Committee with a comprehensive breakdown of the Forest Service's safety and training budgets from Fiscal Year 1995 (the year of the Storm King fire) through the present. In addition, please provide information regarding the percentage of the Forest Service's overall firefighting budget devoted to safety and training during these years.

Answer. Since 1995, the Forest Service has allocated approximately \$23 million dollars to the development and delivery of fire and safety training. This allocation includes funding for the establishment of a National Academy for wildland fire suppression in cooperation with the Department of Labor to help develop new leadership.

Funds for training are included in each Region and unit budget and nationally we do not track these expenditures. Each Region's responsibility is to conduct re-

gional and local training to ensure firefighters are fit, qualified, and prepared to control and suppress fire. The National figure does not reflect the total amount of money spent by each unit to prepare their firefighters, that number is in the tens of millions each year. A conservative estimate for the past 7 years would be \$100,000,000 of Regional preparedness budgets. This represents an estimated annual percentage of fire preparedness funds for the agency ranging from 5 to 10 percent.

DIRECT NATIONAL TRAINING EXPENDITURES FOR 1995-2001

Year	NWCG	NARTC	SEPFA	NJAC	Total
1995	850,000	930,000			1,780,000
1996	900,000	950,000			1,850,000
1997	989,500	1,049,000	500,000		2,538,500
1998	989,500	1,000,000	500,000		2,489,500
1999	979,300	1,000,000	500,000		2,479,300
2000	1,000,000	1,142,000	500,000	1,400,000	4,042,000
2001	1,000,000	1,443,000	500,000	5,200,000	8,143,000
Total	6,708,300	7,514,000	2,500,000	6,600,000	23,322,300

NWCG—National Wildland Fire Coordination Group to develop wildland fire and safety training.

NARTC—National Advanced Resource Technology Center to develop and deliver Nationally level fire management and safety training.

SEPFA—Southeast Prescribed Fire Academy to delivery prescribed fire and safety training.

NJAC—National Junior Apprenticeship Academy to deliver basic and advanced firefighter and safety training in an academic setting to develop fire management and leadership.

Question 3. The issue of training also appears to be key in enhancing firefighter safety, and I believe this is particularly crucial given the large numbers of new firefighters hired under the National Fire Plan. I understand that last year's appropriations were sufficient to allow State and Federal agencies to hire more 8,000 new firefighters this year, creating 3,000 new permanent positions that include employee benefits. To date, some 5,300 additional firefighters have been hired. You have suggested that firefighter safety violations and subsequent fatalities stem not from a failure of Forest Service policies, but from performance in the field. Do you believe this performance failure is caused by a failure in training? If not, to what other factors could performance failure be attributed?

Answer. Any time there is performance failure training and supervision must come under scrutiny. There is reason to believe that both training and supervision were lacking at Thirtymile. The training shortcoming is primarily in leadership and situational awareness. These will be addressed in our Leadership Curriculum that is in the implementation stage and our annual refresher training. This annual refresher training will include lessons learned from Thirtymile, Incident Commander expectations and transition fire management. Supervision and management oversight will be strengthened through training and the Fire Management Plan development process.

Question 4. We have already discussed the fact that the existing 32 hours of training for first year Forest Service firefighters falls far short of that required for volunteer municipal firefighters. Please describe the existing training regimen and the specific safety instruction first-year firefighters receive. Do you believe that extending the training period would enhance safety performance? Why or why not?

Answer. The National Wildfire Coordinating Group, comprised of the Forest Service, the National Park Service, the Bureau of Land Management, the Fish and Wildlife Service, the Bureau of Indian Affairs and the National Association of State Foresters, takes the position that 32 hours of basic introductory fire training is sufficient for first year wildland firefighters. Municipal departments must deal with hazardous materials, interior fire suppression, emergency medical responses and a multiplicity of unpredictable daily responses that wildland firefighters rarely see.

The Forest Service has been fortunate to add 5,400 new firefighters to the federal workforce this past year. These firefighters were not placed on assignment until they were qualified and unless there was adequate supervision. Before a firefighter is deemed qualified, they must pass a work capacity test and receive basic training and experience. Qualified supervision and leadership are always assigned to help the firefighters accomplish their work safely.

The Forest Service recognizes the value of having new employees mentored by more experienced employees. The agency has initiated a new employee orientation

program that encourages supervisors to either mentor or select mentors to answer questions and introduce techniques. More important, these people demonstrate safe fire practices. The only barrier to the continued development of mentoring within the agency is time needed to transfer experience from the mentor to the employee. With the large number of new people, this becomes a much bigger challenge. There is simply no way to transfer every experience within a week. Mentoring and experience transfer is a long-term process the agency is dedicated to implementing.

Question 5. The Forest Service and other experts have commented that effective firefighting also requires on-the-job training, given the multiplicity of variables and complexity of the environment our firefighters face. In order for our novice firefighters to acquire needed experience under the safest possible conditions, some have suggested that a mentorship program should be put in place. What role does mentorship currently play in firefighter training? Has the Forest Service considered implementing or expanding such a program? What do you perceive as the barriers to doing so?

Answer. The Forest Service recognizes the value of having new employees mentored by more experienced employees. Following the South Canyon tragedy, the Forest Service and the other members of the National Wildfire Coordinating Group adopted a performance based training system. This was in recognition that classroom training was not always adequate. The more effective method of training was a combination of classroom and on-the-job training, and experience. The agency has initiated a new employee orientation program that encourages supervisors to either mentor or select mentors to answer questions and introduce techniques. More important, mentors demonstrate safe fire practices. The only barrier to the continued development of mentoring within the agency is time needed to transfer experience from the mentor to the employee. With the large number of new people, this becomes a much bigger challenge. There is simply no way to transfer every experience within a week. Mentoring redundant is a long-term process the agency is dedicated to implementing.

Question 6. Some parties have also expressed concerns about the way federal agencies including the Forest Service have gone about hiring new personnel, as funded by the National Fire Plan. With retirements already eroding the experience of our firefighting crews—I recall that earlier this spring, you testified before the Committee regarding the “graying of the workforce”—there is concern that shifting personnel among agencies in order to fill the 3,000 new permanent positions is breaking up veteran crews, which may have an impact on firefighter safety. It is important to note that the lack of crew cohesion was one the influencing factors cited in the Thirtymile investigative report. What policies are currently in place to retain our more experienced firefighters? Do you believe that hiring policies are having an impact on federal agencies’ ability to retain veterans? So you believe these policies require reform? If so, how should they be reformed?

Answer. Wildland firefighting is physically and mentally stressful. To perform safely and effectively, firefighters must maintain a high level of mental and physical agility and stamina. These necessary mental and physical capabilities decrease with age. Firefighter early retirement was established to keep the average age of firefighters less than that of the general federal workforce. The intent was to maintain a healthy, vigorous, mentally and physically capable firefighting workforce. A large portion of the veteran firefighting workforce will become eligible for retirement or be at their mandatory retirement date in the near future. As a result, we expect to lose many of our veteran firefighters. The firefighter retirement system is working as designed.

Large numbers of new firefighters have not been hired by federal wildland firefighting agencies since the late 1970s. Consequently, in the next several years a larger proportion of our veteran firefighter workforce will be retiring than has in the recent years. The best solution to the dilemma is to even out the hiring of firefighters over time so that the inflow of rookie firefighters equals the out-flow of retiring, veteran firefighters. To accomplish this requires predictably consistent funding for wildland firefighting programs over years and decades. The boom and bust cycle of funding and related hiring of firefighters is the main culprit, not the firefighter retirement program.

Another symptom of the “boom-bust” hiring trend is an over-reliance on temporary firefighters. Managers are reluctant to hire new permanent firefighters during a budget upswing because there is a possibility they will be forced into a reduction-in-force on the next budget downswing. To compensate they hiring a greater proportion of temporary firefighter . . . those easiest to lay-off. These temporary firefighters often work 10 seasons or more only to lose their job during the next budget down-swing. Some of these long-term temporary firefighters are already over

37 years old, the maximum age they can be hired into a permanent position covered by firefighter retirement.

The restriction on maximum retirement age imposed by the firefighter retirement system is the only management tool currently in use to provide for a firefighting workforce that is mentally and physically capable of safely and effectively meeting the demands of the job.

Question 7. We have already discussed the concept of a “zero-tolerance” policy for violations of firefighting safety policies—one means of instituting a culture of accountability within the Forest Service. However, it is not clear from my research that your agency currently has any formal disciplinary policy in place. That is, in the wake of Storm King and the Thirtymile Fires, you have instituted administrative reviews of personnel, their actions, and involvement in the incidents. It seems to me that these reviews—done on a case-by-case basis—may lead to inconsistent disciplinary measures for safety infractions. Within the confines of the Privacy Act, please make certain to submit the list of safety violations and subsequent disciplinary actions taken against personnel that I have already requested. In addition, do you believe that having in place a concrete, comprehensive and proactive disciplinary policy would increase the level of accountability at all levels of the Forest Service? What are the barriers to putting such a policy in place? In addition, do you believe that fire-line safety inspectors would be helpful in enforcing such a policy? What other specific measures are you considering to increase accountability of Forest Service firefighting personnel and management?

Answer. The Forest Service does not maintain formal list of disciplinary actions taken as a result of violations on fires. Formal disciplinary actions are handled at the Regional level. Removal, suspension or down grading of an employee is based on OPM guidance and 5 CFR 752.

We are currently working on a process for reporting safety violations and safe practices. Attachment A is the first attempt at collecting this information.

Each Incident Management Team has a fire safety officer to oversee fire operations on that particular incident. These individuals have proven their value many times over by stopping unsafe fire operations. There is no real way to know the numbers of lives they have already saved, but we see their continued use as imperative.

Question 8. You have also indicated that it is difficult to know which safety measures have been effective, because it is impossible to track “how many people our actions might have saved after Storm King from the things that we learned.” In addition, I understand that the Forest Service currently does not require reporting or investigation of near-miss incidents and entrapments that do not lead to casualties. I understand that Region 5 of the Forest Service is currently testing a new data system—the Automated Accident and Injury Reporting System (AAIRS). Will this new system track data associated with these near misses? If not, please describe the barriers to doing so. When will this system be in place for all Regions of the Forest Service?

Answer. The AAIRS program is a pilot program that is being tested in California. The goal is to have a program that would track all accidents in order to perform trend analysis and to prevent accidents. Currently accidents are reported and “charged” in an agency specific manner and these agency specific databases do not always share information. The first test of the program, which is underway now, is to capture accident information when Incident Management Teams are involved. The second phase would be to capture this same information for accidents that occur during initial attack. The National Wildfire Coordinating Group is assisting in the evaluation of the program and could recommend the program for all wildland fire accidents.

It is too early in the evaluation of the program to generate a timeline for possible national adoption.

Question 9. Please comment more specifically on the steps the Forest Service takes to ensure the integrity of its own internal investigations. Does the Forest Service have a stated policy regarding the way it assembles its investigative teams to look into these incidents? Do you believe that officially injecting another voice into the process—such as an Inspector General—would be constructive and help bolster public confidence in these investigations’ conclusions?

Answer. There is policy developed on accident investigations. (Forest Service Manual 6730). Information on the specifics of assembling accident investigation teams is contained in Forest Service Handbook 6709.12, chapter 30. Both documents are currently under revision. The revisions will contain expanded information on the specifics of assembling accident investigation teams. In addition, more specific information on accident investigation teams is contained in the recently published Accident Investigation Guide.

Internal accident investigations are an accepted process not only in Federal agencies but also in private industry. It is sound safety practice to investigate all accidents. Also, OSHA requires all accidents to be investigated and “the extent of the investigation shall be reflective of the seriousness of the accident”. (29 CFR 1960, “Elements for Federal Employee Safety and Health Programs”, part 29)

In accordance with 29 CFR 1960.70 and OSHA conducted a concurrent investigation.

The Forest Service contracts the position of Chief Investigator on all Washington Office level accident investigations. This is done to ensure we do not compromise, in any way, our serious accident investigation process.

The current process requires the team leader to be an SES employee of the agency. This duty is rotated and an “on call” roster is maintained. Also, a contract chief investigator is used. Upon completion of its investigation, the accident investigation team presents its findings to a board of review. This board works with the investigation team to ensure the report is complete and accurate. The board then makes recommendations on actions that are needed to prevent future mishaps.

The teams are assembled by the team leader to ensure the necessary expertise is represented on the team and also to ensure the team can respond in a timely fashion. Teams that are assembled to investigate entrapments have fire behavior, weather, fire operations and equipment specialist on the team. The National Weather Service normally provides a meteorologist. Other wildland fire agencies may provide expertise as well.

The Thirtymile incident was investigated using accident investigation guide developed in 2000. This guide was assembled in order to improve our investigative process.

Question 10. In the case of the Thirtymile Fire, the Forest Service took the unusual step of reopening the investigation after the initial report had been issued, on September 26. Why did you decide to reopen the Thirtymile Fire investigation? Isn't this the first time the Forest Service has ever done so? Do you believe the emergence of new evidence after the report had already been issued speaks to an underlying flaw or the thoroughness of the investigative process?

Answer. The Chief directed the Board of Review to review the portion of the investigation that dealt with directions or orders that were given following entrapment and prior to deployment. Witnesses had conflicting statements and there was much public discussions relating to what was said or not said and to what was heard or not heard. The Board of Review looked into this part of the report again and determined that there was some uncertainty as to what was said and heard during that crucial time.

The reopening of the investigation did not alter that findings of the report nor did it affix blame to the victims.

Question 11. How, specifically, do you believe Congress can be a better partner in ensuring the safety of our federal wildland firefighters?

Answer. Recognize fire fighting is dangerous. Recognize we have made significant progress in safety despite the recent tragedies.

Recognize there is a lot of pressure to fight every fire and a lot of pressure not to fire in particular places. At time the public debate over natural resource management comes together on the wildfire stage. Our dedicated wild land fire managers and fire fighters are often expected to process many factors quickly and always make the right decision a difficult task at best.

As the federal budget comes under more pressure, some will want to reduce preparedness finding. The Forest Service workforce over next several years is going to be developing essential knowledge, skills and abilities. This workforce will rely on adequate funds for training development and staffing depth to ensure safety.

You can also assist us by continuing involvement though your oversight, support and interest.